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by

SETSUKO HISATOMI

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TO YUKUO

ABSTRACT

The purpose of this study is to account for the relation between reading comprehension of second/foreign language and its social context.

Chapter I states the background of the problem by making a comparison of EFL (English as a Foreign Language) teaching in Japan and ESL (English as a Second Language) teaching in Canada. I have also referred to a new trend of language studies in which the sociogenesis approach is advocated.

In Chapter II, I am aiming at analyzing the act of reading second/foreign languages from two perspectives, i.e., reading processes and problems of learning non-native languages. Present cognitive theories are introduced and discussed as well as the theories on second/foreign language. Two schemata especially have attracted my attention each of which represents a field of study, i.e., Uchida's reading model in the field of cognitive psychology; and Bialystok's model of second language learning. These two models consequently helped me offer a comprehensive model for reading in a second/foreign language.

Chapter III describes the method of research. Experiments are done both in Canada and Japan with the subjects of French mother tongue, English mother tongue, Japanese living in Canada and Japanese in Japan. Analyses were made as to the differences between ESL and EFL, a mother tongue and a second/foreign language and the proximity of one's mother tongue to the target language. The results have suggested

that the language learning in a social context in which the language is supported, help the learner comprehend the gist of a text.

A schema of reading comprehension of a second/foreign language is offered in Chapter IV through the induction of the results of the experiment and also by combining the framework of Uchida's and Bialystok's models.

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CHAPTER I

I. INTRODUCTION

Background of the Problem

1. Poor TOEFL Results in Reading Comprehension by Japanese[1] Applicants

Japanese people have received education with a high degree of uniformity and now the literacy rate is nearly 100%.

When we turn our eyes to the TOEFL score, however, we find that the mean score of Japanese applicants in reading comprehension of English is 48,[2] being ranked as number 107 out of 126 native languages. It is usually believed that a good reader in a language will also be a good reader in another language. Are all the Japanese applicants to TOEFL poor readers? How should we interprete this contradiction?

2. History of EFL[3] in Japan

English had a special role at the time of Meiji Restoration (1897) as a tool to facilitate the westernization/modernization of Japan. There have been two interesting characteristics about the Japanese people's educational

---

[1] The reference is to ethnic Japanese in Japan.

[2] Highest score in reading comprehension was 58 through July 1980 to June 1982. Cf. TOEFL Test and Score Manual, 1983.

[3] EFL = English as a Foreign Language.

interest since then, one is the people's concern in education, the other is the modification of imported culture.

By the end of the 19th century, more than 45% of males and 15% of females of Japanese are said to have been literate with the help of "temple schools," that is, institutions run by feudal lords for their tenants before the Meiji Restoration. It is said that the rapid introduction of foreign languages and cultures would not have been possible without this high level of literacy in Japan.

The modification of foreign cultures was already seen in ancient Japan when Korean and Chinese cultures were imported (A.D. 3c. to 8c.). This was done in order that these imported cultures better fit Japan's national interests. This process seems to still survive in the present English instruction in Japan, especially in the manner in which translation methods have been rooted in the field of English pedagogy.

A radical structural change of English instruction was brought about by the American occupation after World War II. Learning English came to be practically compulsory for all students when they entered junior high schools at the age of 12.

During the mid 1950's, the audio-lingual approach developed at the University of Michigan was introduced into Japan and had a significant influence on English teaching methods in junior high schools. In senior high schools, however,

teaching translation and grammar of English remained as the basis for university entrance examinations.

In 1960, a council for the improvement of English teaching was established advocating the importance of practical usage of the language. The linguistic activity through the media of audio-visual aids, and sentence pattern practice based on the audio-lingual approach came to be popular, which was in keeping in pace with the enormous increase of the production of tape recorders.

Nonetheless, the national concern over English language teaching increased. The means and methods of English language teaching in schools also became uncertain. This was reflected in the 1978 decision to reduce English class hours in public junior high schools from five hours to three hours per week. This was a consequence of the reduction of the total class hours to lighten the curriculum burden. However, this created a very serious situation in which many people opted for private schools where the reduction of curriculum burden had not taken place. In addition, the school children at public schools were driven to go to "Juku" (preparatory schools) to prepare themselves for entrance examinations competing with their colleagues in private junior/senior high schools.

There was a series of famous heated debate on English education in Japan from 1974 through 1975. W. Hiraizumi, a member of the House of Councillors, resented the ongoing

teaching method and proposed that English should be learned as an elective subject at high schools and should be excluded from university entrance examinations. He argued that only 5% of efficient users of English is better than accepting a larger percentage of poor users. S. Watanabe, a professor in Sophia University, argued that English is a most reliable indicator to examine students' aptitude for learning at university and defended the ongoing English curriculum. His contention was that the English language studied in preparation for entrance examinations could be and some times should be very different from the English to be learned for practical purposes.

It is not clear, however, how this debate actually influenced the decision to reduce the class hours in junior high schools. English education in Japan is now facing another storm of criticism in the midst of tough international problems and never-ending tough entrance examinations.

3. History of ESL[4] in Canada

Canada is very different from Japan in many respects--vast and sparsely populated areas with intense climate versus small and densely populated areas with mild climate; a multi-cultural, multi-ethnic and multi-linguistic society versus a mono-cultural, mono-ethnical and mono-linguistic society.

---

[4]ESL = English as a Second Language

These differences understandably result in different value systems. Thus the motive and purposes of language instructions are very different between the two countries.

In Canada, the Report of the Royal Commission on Bilingualism and Biculturalism, 1967 to 1970, was an attempt to resolve the differences between the English and French populations in Canada by means of rational inquiry and planning. As a result of the policy implications of this report, second language learning and bilingual education became important educational issues from around the end of the 60's to the end of the 70's. The Official Language Act in 1969 has enhanced the status of French vis-a-vis English in many sectors of public life.

English education in the 40's, 50's and early 60's was mainly aimed at giving enough proficiency in oral/aural English to immigrants so that they could enter the labour force as soon as they came into the country.

Though the number of immigrants has decreased during the past ten years, ESL interests and needs have expanded as the number of students from other countries entering secondary and post-secondary institutions in Canada increased. In order to cope with the varied and extensive needs of the new ESL learners, new courses concentrating on the reading and writing skills have appeared in numerous colleges and universities across Canada. Syllabuses were designed so that the students will use their language skills as a medium

rather than as an end. The validity of this medium-oriented approach was backed up by several studies such as Saegert, Scott, Perkins and Tucker (1974) and d'Anglejan (1975).

The pedagogy and policy of ESL in Canada are attempts to reconcile "Mosaic" characteristics of Canadian society and to provide academic English knowledge useful in university degrees.

4. Need for Study of Language in its Social Context

During the 1970's, a new generation of educational psychologists and sociologists became active in the field of second language studies. Their attention was not paid so much to a linguistic theory of language as to the speech interaction within social contexts. Oller (1970), for example, questioned the validity of concepts introduced by transformational generative grammarians and presented pragmatics as an alternative. Wilkins (1976) showed the concept of 'notional syllabus' which is based on the functions of learner roles, settings, topics, etc. Widdowson (1978) defined language as a formal system and language use as communicative events.

In the field of Psychology, where the interaction between a organism and a society had been a major concern, especially in the field of developmental psychology, the need for language study in its social context came into the spotlight as psychology came to pay attention to the sociogenesis of human behavior. That is, psychologists have become

conscious that much of the knowing evidenced by people has its genesis in social interaction. Scarr (1979) writes as follows:

> The idea of context-free, general laws of behavior seems to have gone the way of culture-free tests--There is no such animal.
>
> ...and larger theme is "the embeddedness of psychology in its own social-cultural-historical context." As Lee Cronbach asserted some years ago, the major task of social scientists is to discover (or perhaps invent) important regularities of the times and places in which they live. The idea of eternal invariants in the social sciences seems both unreasonable and undesirable (p. 810).

In the field of psycholinguistics Prucha (1983) argues that what is necessary now is not so much to produce new findings as to make synthesis to compare, classify and evaluate the information already available. He points out two social determinants which are influencing language behavior:

> 1. Any form of language behavior has to be viewed in the framework of other human activities. Thus, a starting point for and identification of social determinants of language behavior lies in a description and analysis of human activities...(p. 293).
>
> 2. Any act of language behavior is caused by certain purposes existing in supra-individual, social reality.... In this sense, social need is a prerequisite of any activity of an individual or a society--as something which elicits the motives for activity (A. N. Leontiev, 1975).

The conceptual origin of these contemporary ideas is justly traced to Lev Vygotsky and Alexander Luria.

Luria's ideas were much influenced by Vygotsky's theory, three major themes of which are: (1) the use of genetic explanation, (2) the search for the social origins of human psychological functioning, and (3) an emphasis on the role of sign systems in mediating social and individual processes (Luria, 1982, p. 3).

This approach of genetic explanation indicates that in order to understand human and psychological processes, we have to trace down to their origins. What I am trying to do with this present study is to make it serve as a portion of ongoing sociogenetic studies.[5]

Purpose of Study

1. Narrow Purpose

This study aimed at clarifying the influence of social differences between Canada and Japan on the reading comprehension of a second/foreign language. The social context comprises (1) supportive situation, and (2) non-supportive situation for the target language. More specifically, this study shows different patterns of reading English texts by the readers of a Japanese mother tongue and a French mother tongue under the two social contexts, Japan and Canada.

2. General Purpose

The aim is to account for the relation between one's

---

[5]Contemporary and historically valuable theses are put forward by various sociogenesis theorists. Cf. Bain (1983).

cognition or understanding of the gist of a literary passage through a foreign/second language. As described in Chapter II, metacognition is indispensable for reading comprehension. Assuming that the comprehension of the gist of a story reflects metacognitive understanding, it will be examined how and why the differences are made as social and linguistic contexts differ.

Definition of Terms

1. Social context is used as the social factors involved in language behavior. Prucha (1983) has formulated four problems by which the characteristics of social determinants and its control over language behavior are investigated: (1) to identify and describe all relevant extraindividual factors influencing particular types of language behavior, in order to clarify the essential content of the phenomenon called social determinants, (2) to ascertain which of the social determinants are primary and which are subsidiary, (3) to ascertain which determinants operate in all types of language behavior and which operate in specific types only, (4) to investigate how social determinants ...function in particular developmental stages of language behavior in life and how social determinants operate in respect to the ontogenesis of language behavior.

2. Interlanguage. Since about 1970 language variety has been examined as a language system with its own rules and characteristics. This type of study is usually referred to

as 'interlanguage' or 'learner language studies.' The main purpose of the study is to look at language learning processes and outcomes.

3. The following abbreviated forms are used to represent subjects' social background and languages:

F/C: Canadian whose primary language is French.

E/C: Canadian whose primary language is English.

J/C: Japanese in Canada whose primary language is Japanese.

J/J: Japanese in Japan, Japanese whose primary language is Japanese.

Both males and females are included in each group; and where appropriate, are specifically represented as F/C(m) (=French Canadian, male) or J/J(f) (=Japanese in Japan, female), etc.

4. Reading Note. Masculine gender form is used in the present study in order not to fall into the jargon like he/she, him/her. This usage, of course, never means sex discrimination.

Limitations

1. The act of reading French, English and Japanese texts is mediated by the translation of the texts, the consequences of which cannot be measured via the present methodology.

2. No analysis was made as to the differences of mediation system between the alphabet and Japanese syllabary/Chinese ideograph.

3. No control was made on the teaching methods which the subjects have had before this test.

4. Tests were done through computer terminal screen in Canada whereas by pencil and paper in Japan. No analysis is made as to the differences between the two test methods.

5. No ethnographic analysis is made as to what a second/foreign language means to Japanese or Canadian subjects.

6. This study is limited to one age group/social class.

7. Second/foreign language learning was studied independent of personality variables.

CHAPTER II

ANALYSES OF RELATED RESEARCH AND STUDY

On Reading

1. What is Reading?

Saeki (1984) writes that the act of reading is fundamentally the same as watching paintings. A reader/observer watches what is represented in a written/painted form which is the manifestation of a writer's/painter's thought, the view written/painted through the writer's/painter's camera angle. Each form creates the reader's/observer's own world in the form of four dimensions. In other words, the act of reading texts/watching paintings can be described as the process of adjusting one's camera angle in accordance to his own empathy.

One could activate his camera angle simultaneously only if he could follow his metacognition. He should be conscious about what phenomenon he is carving out to represent more clearly what is being watched. The act of reading is similar to watching paintings in that a writer's/painter's intention may not always be equal to a reader's/observer's understanding, as both of them undergo the form of subjectivity.

Reading is a type of activity; the process of which involves both language and cognition. Theories of reading have changed in response to the emergence of new cognitive theories around the mid 70's. A series of studies have found that what a reader retains in reading is not the contents of

a text itself but the constructs and the frame of the text in which the reader's inferences are mingled (Bransford & McCarrell, 1974; Sulin & Dooling, 1974; Dooling & Christiannsen, 1977). These studies reassured the idea presented by Bartlett (1932) that the sentence recall is liable to be affected by a subject's pre-knowledge as time elapses.

Thus, the act of reading can be interpreted as a process of constructing a meaningful mental representation with the reader's pre-knowledge stored in long-term memory by means of the available strategies.

2. Previous Knowledge in Reading

How does a reader's previous knowledge interact with reading" There are at least three heuristic guides to understanding this interaction: schemata, camera angle and focus, and metacognition.

(1) Rumelhart (1980) explains the concept of schemata as follows:

> Schemata ..are the building blocks of cognition. They are the fundamental elements upon which all information processing depends. ....A schema contains...the network of inter-relations that is believed to normally hold among the constituents of the concept in question (p. 33f).

It is believed that there are two basic sources of activation for schemata; top-down and bottom-up activation, or, conceptually driven and data-driven processing in Norman (1975)'s terminology. Top-down

processing is expectation-driven processing, i.e., when a schema is activated followed by a subschema, the subschema derives from an expectation that it will account for some portion of the input data. The bottom-up schema is said to be activated whenever a subschema that has been somewhow activated causes the various schemata of which it is a part to be activated. In other words, top-down processing goes from whole to part, whereas bottom-up processing goes from part to whole.

Several studies have shown that people use schemata when asked to recall the story they have read (Mandler & Johnson, 1977; Thorndyke, 1977; Kintsch, 1977; Stein & Glen, 1978; Bower et al., 1979).

It is also suggested that the understanding of a story will be biased by a reader's stored schemata. That is, ambiguous sentences are interpreted differently among college student groups with different majors (Anderson, 1977); a story brings about a different recall when the name of its leading character is changed to a famous person whose life story is well known to everybody (Sulin & Dooling, 1974).

(2) Camera Angle and Focus

Pichart & Anderson (1977) report that readers recall different items in accordance with the characters they are asked to focus on. Uchida (1984) has pointed out

that concrete objects lead to easier recall of a story for school children than do abstract concepts, e.g., recall is better when subjects are told to focus on the camel than on the animal. These studies suggest how the camera angle of a reader affects the interpretation of a text within a schema. The concepts of camera angle seems useful in attempting to account for the phase of subjectivity in reading.

(3) Metacognition

One of the most important aspects of reading is the ability to examine whether the whole text is consistent and meaningful. In other words, reading requires a deliberate conscious control of one's own cognitive actions. Flavell (1976) defines metacognition as:

> ...among other things, to the active monitoring and consequent regulation and orchestration of these processes in relation to the cognitive objects or data on which they bear, usually in the service of some concrete goal or objective (p. 232).

It is generally believed through many researches that the processes of monitoring and evaluating are difficult for young children (Flavell, 1978, 1979; Baker, 1978; Markman, 1979). Poor readers are also characterized as those who lack in metacognitive ability. This problem will be discussed in Section 4 of this chapter.

Flavell (1979) pointed out four factors of monitoring--metacognitive knowledge, metacognitive experience, task and strategy. Metacognitive knowledge develops through the interaction with metacognitive experience, in which the interaction with social context can possibly play a very important role. Dweck & Goetz (1977) reports that the children's sense of inability in his study has been acquired in the course of their poor interaction with their teachers. Wertsch (1977, 1978) also argues that the origin of a child's self-control ability lies in the self-other interaction with his mothering one.

3. The Model of Reading Process

Uchida (1984) postulates a frame of reading processes. Figure 1 is a revised model of Uchida's, which, I believe, accounts for my study.

Insert Figure 1: Process of Understanding Texts

Reading comprehension is an interactive parallel processing with top-down sequence and bottom-up sequence as we saw in the previous section. That is, one direction goes down from the component 1 to 5 in the frame of Level A of Figure 1 working as a top-down process; whereas the other in Level B, the bottom-up process works from letter recognition and word formation to sentence and text construction. The interaction

among 1, 2, 3, 4 and 5 (marked by < > in the figure) should be very active during the processing of understanding. The mechanism of strategy that a reader will use is represented by the marker < >; monitoring, choosing adequate knowledge and finding answers. Notice that the component 1, 2 and 3 represent the knowledge which the reader has already acquired, whereas 4 and 5 are the constructs brought about by the co-operation of pre-knowledge and strategies.

4. Characteristics of Poor Readers

Quite a number of researchers have tried to account for which factors of the reading process cause a reader poor understanding of texts. Doehring et al. (1981) studied the basis of the comparison of correction rate in reading between good readers and poor readers; Clay and Imlack (1971) compared and analyzed the process from the viewpoints of juncture, pitch and stress; Isakson (1976) examined the sensitivity to the syntactic and semantic cues in sentences--whether the readers pause and think when they encounter verbs violating constraints in sentences such as "The boys prayed the teachers." I would rather point out as crucial indicators that poor readers (1) fail to monitor their own reading, and (2) tend to fail to make use of contextual clues in the text. The first direction is related to top-down sequence presented in the frame of Level A in Figure 1, and the latter is related to bottom-up strategy in the frame of Level B.

(1) Poor Monitoring

As seen in Section 2 of this chapter, young children are short of metacognitive ability. The same holds true with poor readers. DiVesta, Hayward, & Orlando (1979) have found that poor readers in sixth, seventh, and eighth grades have not fully learned to control reading for comprehension. The test comprised two comparable versions of a cloze task with a key paragraph--information critical for the completion of blanks--either before or after the cloze paragraph. The result was that the readers with better command of overall comprehension capabilities showed smaller gaps between the accuracy based on a previous context and the one based on a subsequent context.

Forrest and Waller (1979) studied school children with good, average, and poor reading ability and examined whether they used different strategies in accordance with the purpose of reading, e.g., reading for fun, to make up a title, to skim or to study. The analyses showed that the ability varies across reading and grade levels.

Applying these studies to Figure 1 in Section 3, we find that poor readers have trouble in component 1, and in the strategy derived from the component.

(2) Lack of Making Use of Context

Goodman (1973) and Smith (1978) found that good readers tend to make use of both contextual and graphic information while reading whereas poor readers tend to make use of only the graphic information.

Potter (1982) argued that the ambiguous phrase of "making use of the context" can refer to either the degree to which a reader applies his linguistic and conceptual knowledge or it can refer to the outcome itself. This can be interpreted, by referring to my model in Figure 1; that is, it is not clear whether the concept of "making use of the context" means the activity within the frame of Level B or whether it refers to the outcome brought about up to the stage 4 in the frame of Level A. Thus, Potter designed a test in such a manner to control readers' pre-knowledge about a text and examined whether good readers made better use of the succeeding context by using a better strategy. He has found that the children at the ages of seven and eight are better at using preceding context than succeeding context, and the better the reader the better is his use of succeeding context. The ability of making use of succeeding context means that a reader can look ahead before responding to give proper answers.

Potter used the "cloze method" in his study as a good indicator to determine whether or not good and poor

readers differ in their ability to make use of the context. In the present research presented in Chapter III, the cloze method is also used to examine whether the reader uses both preceding and succeeding contexts as contextual clues within the domain of texts.

On the Issue of Language Learning

1. Second versus Foreign Language

The term foreign language was mainly used in contrast to native language in former days, but nowadays the term second language is used for all types of non-native language learning. This distinction is made whether a target non-native language is learned and used within a national or territorial boundary or outside the boundaries; i.e., the term of "second language" is applied to the former, and "foreign language" to the latter (Stern, 1983). Paulston (1974) pointed out that the second language is frequently the official language or one of two or more recognized languages which participate in the political and economic life of the nation whereas the foreign language does not necessarily have such status.

Marckwardt (1963) made the distinction that a second language is needed for education whereas a foreign language is learned with different purposes; e.g., travelling abroad, reading foreign literature, etc.

Another major distinction is that because of its use within a country, second language has more environmental

support than foreign language. Hence a second language does not need as much formal instruction but can be learned informally compared with a foreign language.

Within the perspective of my study, English language serves as a foreign language for Japanese people living in Japan, and as a second language for Canadians with a French mother tongue living in Montreal and Japanese living in Toronto.

2. Problems of Language Learning

Stern (1983) has pointed out three major problems of learning new language; the L1-L2 connection, the explicit-implicit option, and the code-communication dilemma.

(1) L1-L2 Connection

The L1-L2 connection means the disparity between the dominance of the first language and the inadequacy of the learner's knowledge of a new language. This problem leads us to consider whether a learner should be encouraged to exploit his first language knowledge and learn the new language through his first language "crosslingually," or, whether he should learn the target language within and through the second language "intraligually." The importance of the first language in learning a second language was reaffirmed around 1960. However, since around 1970, the rejection of this hypothesis has emerged. Dulay and Burt (1974) argues that second language learning should be

cultivated in intralingual rather than crosslingual terms. Schumann (1978), on the other hand, argues that a learner attempts to solve the problem by moving from his first language as an existing reference system to the target language as a new reference system.

Selinker (1972) introduced the concept of <u>interlanguage</u> and postulated the developing learners' language as a system in its own right:

> Second language speech rarely conforms to what one expects native speakers of the target language to produce, that it is not an exact translation of the native language, that it differs from the target language in systematic ways, and that the forms of utterances produced in the second language by a learner are not random (Selinker, Swain, and Dumas, 1975; p. 140).

This concept recognized the systematic nature of the learner's language assuming that the learner develops his own second language system to a certain extent on the basis of his first language.

There arises another problem about the interlanguage continuum, however. That is, whether the interlanguage is predominantly the <u>reconstruction</u> of a second language on a first language basis or it is <u>created</u> by a learner independently of his first language influences. The first one, the concept of which is similar to the crosslingual theory, is now called the Restructuring Hypothesis (Stern, 1983: 396). The second one which is along the line of the

intralingual theory, is called the Creative Construction Hypothesis (Ibid.). This latter hypothesis looks for inherent principles of second language development and suggests a parallelism between first language acquisition in early childhood and later second language learning.

Corder (1978) interpretes the interlanguage continuum as the intermediate situation between the restructuring and the recreation hypothesis. That is, he favours a hypothesis intermediate between these two extremes. This interpretation, in my opinion, seems most legitimate to account for complex mental activity.

(2) Explicit-Implicit Option

The second issue suggested by Stern (1983) is whether a learner should treat the language task intellectually and systematically as a mental problem, or, whether he should avoid thinking about the language and absorb the language more intuitively. This question recently reappeared as Krashen's monitor theory (1978, 1981). Krashen distinguished language learning--explicit, conscious process, from language acquisition--implicit, subconscious process. In order to learn a language, a learner should know the rules of the language, which demands monitoring his own linguistic output. In Kreshen's view, the acquisition process is more efficient than is the learning process because

language proficiency develops more through unselfconscious use in communication than through conscious study.

In my view, it is better not to go into too rigid a choice between learning and acquisition as Hilgard (1948) wrote long before Krashen's theory, since all learning is to some extent cognitively controlled. McLaughlin (1978) also questioned the legitimacy of the rigid distinction between learning and acquisition advocating that a more successful model should be the one that avoids the recourse to conscious or subconscious experience and that should generally tie into ongoing mental activity.

(3) Code-Communication Dilemma

The distinction between the formal learning of a language as a code and the learning of the language through use in communication has recently become a major focus of interest. In other words, language teaching at school is formal, analytical and is concerned mainly with code; whereas language use in natural setting is communicative and non-analytical.

There seems to have been no research which accounts for the consequence of the distinction between learning language as a code and that through communication. In my opinion, the difference of the social context in learning plays a vital role concerning this problem.

To learn a 'second' language through 'participating' in real life communication, must be a better method, of course, but is not always possible in societies where the target language is actually 'foreign.'

3. Model of Second/Foreign Language Learning

The strategies and techniques of second language learning have been investigated by several researchers (ex. Rubin, 1975; Stern, 1975; Frohlich, 1976; Naiman et al., 1978) to find out how learners cope with the difficulties that they face in language learning. Bialystok (1979, 1980), among other studies, attempted to explore the role of monitoring and inferring mechanism in second language learning. His model incorporates the distinction between explicit and implicit ways of learning, formal and communicative strategies; and it also incorporates a monitoring system.

Figure 2 shows the framework of Bialystok model.

Insert Figure 2: Bialystok's Model of Second Language Learning

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It has three levels: input, knowledge, and output. The input level deals with conditions of learning in which the learner is exposed. The knowledge level is actually a black box where Bialystok postulates three stores: other knowledge, explicit linguistic knowledge and implicit knowledge. Other knowledge means the information in general whereas the other

two consist of the information of the target language. He explains that explicit knowledge contains grammar rules, vocabulary knowledge, and so on; whereas implicit knowledge stores intuitively known items in the new language. The output of the system is two-fold: type I, an immediate and spontaneous language activity such as talking to people or listening to a radio broadcast; and type II, a slower and more deliberate activity such as reading texts or writing letters.

Applying Bialystok's model into the reading model presented in Figure 1 in Chapter II-3 means that Level 2 -(1), -(2) and -(3) of Bialystok's model refers to, respectively, level A -2, B -(3) and A -3 of my model.

The explicit linguistic knowledge could be learned by classroom instruction. But implicit linguistic knowledge would not be learned only through formal practicing in a classroom. This latter process comprises the intuitive knowledge of a target language which may be deeply rooted in an authentic linguistic social context. How, then, will intuitive linguistic knowledge be developed? Bialystok expresses a remark in view of pedagogical standpoint:

> ...the learner's intuition must be developed and encouraged, and efficient strategies for consulting explicit knowledge must be trained. ...Concentration on only the formal aspect of the language and rule formation not only precludes important aspects of the language but ignores as well the learner's great intuitive source (1979, op. cit.:101).

Bialystok (1980) examined the strategy of inference by presenting different cues to the subjects of foreign language comprehension exams. That is, he provided pictures, summary of the gist of passages, glossary of words used in the passage, etc. to know the difference of the contextual effect on reading comprehension. The results of the study suggested that the readers had different kinds of contextual help, e.g., thematic picture aids in global understanding and a glossary provides both global assistance and the detailed word level.

Takanashi & Takahashi (1984) have devised the same kind of experiments. They presented a cognitive frame of reading materials to their subjects before the task and examined what kind of contextual help would best work for the reading comprehension of English texts. The task was to reorder the scrambled sentences so as to make the statement meaningful. The subjects were divided into three groups and each group was given different levels of the help, i.e., one group with twelve guidelines to follow, another with four, and a third offered only the first and the last concept which were to be put in. The result showed that the more the information in the frame, the more the subjects were helped.

Takanashi & Takahashi also examined the subjects' knowledge in grammar and found there were no significant differences. These results suggest that explicit knowledge in grammar which consists of a micro structure of a text does not always go together with linguistic knowledge in a macro

structure. I have assumed in my reading model that this linguistic knowledge interacts with a monitoring system which enables the understanding of the whole text. Then, another question will arise as to whether the ability to use this linguistic knowledge differs between one's first language and second language. I will examine the relation of the linguistic knowledge between a mother tongue and a foreign/second language, and consider how this knowledge interacts with metacognitive component.

CHAPTER III

METHOD OF RESEARCH

Subjects

180 students at the age of 16 and 17 from middle class families participated in this examination as the subjects of J/J. 60 girls were randomly selected from 148 girl students in the 2nd year of senior high school in Yokohama, an urban city near Tokyo; 60 boys are randomly selected from 125 male students in the 2nd year of a senior high school near Tokyo; 20 girls and 20 boys were randomly selected from 87 students in the 2nd year of senior high school in Niigata, a rural city in north-west part of Japan.

As for the subjects in Canada, 160 F/C, 80 boys and 80 girls, and 102 J/C, 68 boys and 34 girls, participated. There were also 160 E/C, 80 boys and 80 girls, who participated in this study in order to make a comparison with other groups. They were all from middle class families aged 16 to 17 living near Toronto. F/C started to take formal English classes two to three years prior to the study. J/C went to Canada from Japan no more than three and no less than one and a half years prior to the study and have been attending local public high schools. They had taken English classes in Japan for one to two years before they went to Canada.

Test Materials

Text A: The story of "The Miraculous Pitcher" from A Wonder Book by Nathaliel Hawthorne, rewritten by J. E. Caldwell for

Japanese students in introductory level of English. Time limit for reading was 35 minutes. (See appendix I-1.)

Text a and Text a': The first half part of Text A translated into French for F/C (Text a) and the same text translated into Japanese for J/C and J/J (Text a'). The reduction of the length was made because of the limit of class hours. Time limit for reading was 10 minutes. (See appendix I-2 and -3.)

Text B: A part of the essay of "Wolf Hunting" from My Childhood in Mongolia by Urgunge Onon. Time limit for reading was 15 minutes for F/C, J/C and E/C, and 35 minutes for J/J. (See appendix I-4.)

Text b and Text b': A translation of Text B into French (Text b) and Japanese (Text b'). Time limit was 10 minutes. (See appendix 1-5 and -6.)

Procedure

Tests were done during class hours. The task was to fill in the blanks with proper words listed on an attached paper. This type of examination called the "cloze method," was introduced by Taylor (1953) to measure the reader's use of context. The validity of the method is believed to be pretty high, for the reader has to make use of the contextual information to produce a correct response. Examples of the close procedure are well illustrated in Darnell, (1968); Spolsky, (1969); Oller, Bowen, Dien, & Mason, (1972); and McLeod, (1975).

Description of the Sample

Group	F/C	J/C	E/C	J/J
Reading Materials	(English) Text:A,B	(English) Text:A,B	(English) Text:A,B	(English) Text:A,B
Social Context for Language	Supportive	Supportive	Supportive	Non-supportive
Reading Materials	(French) Text:a,b	(Japanese) Text:a,b	(French) Text:a,b	(Japanese) Text:a,b
Social Context for Language	Semi-supportive	Non-supportive	Semi-supportive	Supportive

Hypotheses

1. Reading English as a second language is qualitatively different from reading English as a foreign language.
2. The ability to understand the macro structure, i.e., to grasp the gist of a text is better in ESL than EFL.
3. The ability of reading foreign languages is unrelated to the reading ability in mother tongue.
4. Language similarity is also a major factor in reading target languages.

Results

1. Differences Between EFL and ESL

(1) Analyses of Correct Answers of Text A

Appendix II-1 shows the number of correct, incorrect and nil answers of each group on Text A. The mean score of correct answers of J/C is 27.14 out of 46 items, whereas that of J/J is 27.74 (percentage of correct answers of J/C was 59% whereas that of J/J was 60.3%, see also Table 1).

Insert Table 1: Percentage of Correct Answers of Overall/Crucial Terms (Text A)

This difference is not significant with level 5% (probability of chance was 0.851). This seems to indicate that the reading ability of J/J is almost the same as J/C and that the supportive social context does not have any advantage in enhancing the ability of reading

comprehension. However, when the comparison is made between the correct answers of "crucial terms" presented on Table 1 and Table 2, a difference was apparent. That is, the percentage of correct answers by J/C shows 79%, whereas that by J/J shows 61.8%.

Insert Figure 3: Correct Answers of Overall/ Crucial Terms (Text A)

Since the comprehension of those crucial terms listed on Table 2 is supposed to be indispensable in understanding the gist of a text, the better results of J/C than J/J means J/C's better understanding of the macro structure of the text than J/J.

(2) Analyses of Correct Answers of Text B

Appendix II-4 shows the number of correct, incorrect and nil answers of each group in reading Text B. Notice that the result of J/C is much better than J/J (percentage of correct answers of J/C is 83.7%, whereas that of J/J is 53.1%). The comparison of correct answers between overall and crucial items of Text B is illustrated by Table 3 and Figure 4.

Insert Table 3: Percentage of Correct Answers of Overall/Crucial Terms (Text B)

Insert Figure 4: Comparison of Correct Answers Between Overall/Crucial Terms (Text B)

Statistical analysis shows that this difference was significant with level 1% (probability of chance, 3.33). Taking the shorter exam period (15 minutes) for J/C into consideration as opposed to 35 minutes for J/J, this difference between J/C and J/J should be duly evaluated.

Table 4 shows the details of the comprehension of crucial terms of Text B.

Insert Table 4: Number of Correct Answers of Crucial Terms (Text B)

The result shows that the difference between J/C and J/J in the comprehension of crucial terms of Text B was also significant with 1% level (probability of chance was 2.12). This consistent superiority of J/C to J/J will indicate that learning a target language in a supportive social context helps learners acquire the ability to grasp the gist of the text.

This gives rise to the question as to why the supportive social context affects language learning. Having been exposed to an ESL social context where learning a target language is of much more importance

than an EFL situation, and where the lack of the knowledge of that language may even become vital, the learners may have been compelled to extract important messages from whatever they may have encountered. This kind of habit formation, in my opinion, has resulted in a good understanding of the macro structure of the text.

2. Difference of Reading Ability Between Mother Tongue and Second/Foreign Language

(1) Comparison Between J/C and J/J

Figure 5 shows the comparison of correct answers between J/C and J/J in reading English and Japanese Texts.

Insert Figure 5: Achievement of EFL/ESL versus Japanese as a Mother Tongue

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The statistical analyses show that the differences between J/C and J/J were all significant except Text A.[6] This indicates that the reading ability of Japanese has decreased while J/C's are away from Japan. That is to say, a supportive social context for a target language is advantageous for learning and maintaining the language.

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[6]The interpretation of the result of the reading of Text A was already discussed in Section 1 of this Chapter. See p. 41.

J/J's better accomplishment of reading Japanese than that of J/C who are better readers of English than J/J indicates a good reading ability in one language does not always assure good reading ability in another language so far as the Japanese and English languages are concerned. It seems that the factor of social context in learning and maintaining a language is indispensable not only in the field of communication but also in reading.

(2) F/C's Accomplishment in Reading English and French

It was found that J/C's reading comprehension of Japanese language is less than that of J/J. The achievement of F/C in reading French provided an interesting comparison. Figure 6 shows the achievement of F/C's reading.

Insert Figure 6: Achievement of F/C (Texts A, a, B, and b)

Statistical analyses suggest that there is no significance either between Text A and a, or Text B and b. This indicates that these English materials were of no difficulty for F/C to read. This fact might also point to the linguistic proximity between one's mother tongue and the target language.

3. Similarity Between English and French

(1) Comparison Between F/C and J/C

Figure 7 shows the comparison of correct answers between F/C and J/C to the questions in Text A and B.

Insert Figure 7: Comparison Between F/C and J/C (Texts A and B)

Differences of both Text A and Text B are statistically significant with 1% level, (probability of chance: Text A, 2.87; Text B, 3.09). Taking F/C's short period (2-3 years) of learning English into consideration, many Japanese would admire their progress. However, in my opinion, language similarity between English and French played an important part for this result as well as being supported by the bilingual social context. It is generally believed that there is no ranking as to which language is more difficult and which language is less so. However, the distance between French and English is less than that between Japanese and English. Moreover, there is no alphabet to share between Japanese and English, and the Japanese syntax is completely different from that of English.

The comparison between F/C and E/C in the following section will let us realize how easy it is for F/C to read English of this kind.

(2) Comparison Between F/C and E/C

Figure 8 shows the comparison of correct answers between F/C and E/C to the questions in Text A, a, B and b.

Insert Figure 8: Comparison Between F/C and E/C (Texts A, a, B and b)

None of the differences of Text A, a, B or b, between F/C and E/C were significant. That is to say, F/C's reading ability was as high as E/C's in reading their mother tongue. Taking advantage of the language similarity between French and English and also the favourable social context for learning and maintaing both French and English, F/C in Canada enjoy high scores in reading both French and English.

Discussion

1. Differences Between the Texts

The difference between Text A, a long repetitive nursery tale, and Text B, an essay on the recollection of the author, has created some interesting results in the answers of F/C, J/C and J/J. The percentage of correct answers in Text A of F/C, J/C and E/C was 85.46%, 58.99% and 60.30% respectively; whereas that in Text B was 98.34%, 83.67% and 53.1%. These figures indicate that only J/J had a great difficulty in reading Text B. Recall that only J/J were allosed 35 minutes for answering reading questions in Text B while the others were

given only 15 minutes. The practical difference might have been even greater than these figures suggest.

2. Meaning of Good Achiever

As pointed out earlier, J/C's percentage of correct answers were less than J/J's regarding the reading of Text A. But, J/C's scores were better when only the percentage of correct answers to "crucial terms" were calculated. Similar phenomena can be observed for incorrect and nil answers.

Figure 9-(1,2) shows the comparison of incorrect and nil answers of J/C and J/J in reading Text A and B.

Insert Figure 9-(1,2): Incorrect and Nil Answers by J/C and J/J

The figure indicates that the percentage of incorrect answers of J/C was less than that of J/J's, but the percentage of nil answers of J/C was higher than that of J/J's. Looking at the profile of the answer on Appendix II-1, we can notice the numbers of nil answer increase toward the end of the text. The exception to this trend being the two crucial terms at the bottom. This can be interpreted that J/C's speed of doing the task, i.e., filling in the blanks, was not as fast as that of J/J, though their eye span was fast enough to grasp the whole meaning of the text and to fill in the vital two terms at the end of the text. This fact suggests that if the meaning of a good reader incorporates the "speed" of doing a task, the

interpretation of the results should change.

3. Vernacular Language Use

It is difficult for most Japanese to know the correct distinction between the terms "however" and "but." Some grammar books tell them not to begin sentences with "but," because it is a "conjunction." However, some English books published in Japan, including English textbooks for high school students, actually begin sentences with that term. In my study, "however" was supposed to be filled in three times in Text A and a time in Text B:

Text A: Key #30

1. (However), the people in the village were mean and unfriendly.
2. (However), the young man asked for more milk and reached for the empty pitcher.
3. Philemon knew there was none inside, (however), when he looked in again, he saw a fountain of milk at the bottom....

Text B: Key #18

4. (However), one aspect of the affair was most puzzling.

The percentage of correct answers by group was as follows:

Text A 1	F/C:	100%	J/C:	50%
	E/C:	100%	J/J:	37%
A 2	F/C:	88%	J/C:	50%
	E/C:	79%	J/J:	27%
A 3	F/C:	23%	J/C:	87%
	E/C:	11%	J/J:	17%
B 4	F/C:	5%	J/C:	71%
	E/C:	12%	J/J:	50%

In the blanks of sentences 3 in Text A and 4 in Text B, F/C and E/C have chosen the term but instead of however; whereas J/C retained "grammatical correctness" and have filled in the term of however. This may be a kind of vernacular speech which the readers prefer using in natural settings.

The same phenomena are also seen in reading Text a of J/J as to the terms of tokoroga (=however) and ga (=but). In Appendix 10 key #10, we notice that most of the subjects have agreed that the term tokoroga should be put in this blank, but in more informal writing ga is also passable. The two subjects who filled in ga instead of tokoroga might have felt that the latter usage was too formal for this text, a nursery tale. The same interpretation may apply to the usage of however and but in Text A and B.

Conclusion

The tests on Text A and Text B have shown very different results. Text B might have been easy for F/C, J/C, and E/C; F/C could read it as easily as Text b written in mother tongue; and E/C's reading scores for Text b were also very high.

This suggests that F/C and E/C have a good command of both English and French so long as they are reading this type of easy stories.

J/J, on the other hand, must have found Text B more difficult than Text A.

The first hypothesis (in which better reading comprehension of a target language is expected in ESL situation than that in EFL situation) was supported by the reading comprehension of Text B.

The result of the test on Text A in which J/J's score is as good as J/C's may seem to deny the hypothesis. However, if the reading comprehension is evaluated on the basis of understanding crucial terms in the text, the score of J/C surpasses that of J/J, and hence supports the hypothesis.

As to the third hypothesis (concerning the relation between one's mother tongue and second/foreign language) J/J's good achievement in reading Japanese, in spite of their relatively poor achievement in reading English, has proved the relative unrelatedness between the reading ability in mother tongue and that in foreign language. J/C's result in reading Japanese text, which seems poorer than J/J's, suggests that the non-supportive social context for Japanese language might have caused the poor performance of J/C. It suggests that one's linguistic ability itself may be much influenced by the social context in which one learns and uses a target language.

As to the hypothesis about the language similarity between French and English, F/C's superiority to J/C both in Text A and B suggests that the similarity plays an important role as well as supportive social context for learning and maintaining a target language.

CHAPTER IV

SUMMARY AND IMPLICATIONS

> The structure of the organism presupposes not an accidental mosaic but a complex organization of separate systems...(which) unite as very definite parts (of) an integrated functional structure (Luria, 1932, p. 6f).

1. Reading Process of Second/Foreign Language

Sulin & Dooling (1984), Bialystok (1980), Takanashi and Takahashi (1984) and other researchers mentioned in the preceding chapters have found that the cognitive cues such as providing a picture, summary of the gist of the passage, or frames of the text, help a reader reconstruct a story. In the general reading situation where no cognitive clue is given, a reader usually tries to reconstruct the writer's message by means of combining the messages obtained from Level A and Level B in the reading model presented in chapter II-3 (see p. 20). To be more specific, in the activity of reading, a reader will begin to look for outstanding words and/or search topic sentences of the story in Level B, which will consequently compose a part of "knowledge about language" labeled as component 3 in my model. He also refers the information in the component 3 simultaneously to other information in other components of Level A, such as the world knowledge, and the purpose of reading this particular text.

When one reads a text written in his second/foreign language, which is tougher in most cases, the component of

"knowledge about language" is more fragile compared with that of his mother tongue, for this component is composed of not only explicit knowledge such as words or syntax but also implicit knowledge or intuitively known items about the new language. Bialystok's model in Chapter II-3 (see p. 32) explains that this implicit linguistic knowledge is generated by functional practising from the componenet of "language exposure" as well as formal practising from the component of explicit linguistic knowledge. In other words, language exposure is indispensable to foster the implicit linguistic knowledge.

This also means that the language exposure is indispensable for Component 3, the component of knowledge about language in my model (a modification of Uchida's model) for reading comprehension, for this component must consist of both implicit and explicit linguistic knowledge.

Then a question will be raised as to how this language exposure affects the whole process of reading comprehension. In my view, linguistic exposure in authentic social context helps one to gain linguistic metacognitive ability.

Flavell (1979) pointed out two major constructs of metacognition, i.e., metacognitive knowledge and metacognitive experience, and explains the relations between them:

> Metacognitive experiences can have very important effects on cognitive goals or tasks, metacognitive knowledge, and cognitive actions or strategies.

> ...metacognitive experiences can affect your metacognitive knowledge base by adding to it, deleting from it, or revising it.... Although metacognitive knowledge can undoubtedly undergo at least some modification without metacognitive experiences, I suspect that these experiences play a major role in its development during childhood and adolescence (p. 908).

Thus we can make an induction from what Flavell has stated that the language experience is indispensable for acquiring linguistic metacognitive ability.

Figure 10 is a part of reading comprehension model of second/foreign language in which Bialystok's model and Uchida's model (partially modified) are incorporated. This also accounts for the reason why the language experience is necessary for the reading comprehension of second/foreign language.

Insert Figure 10: Schema of Reading Comprehension of Second/Foreign Language

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The mechanism incorporated for reading comprehension is as follows:

(1) Language Exposure is indispensable for Implicit Linguistic Knowledge (by Bialystok),

(2) Implicit linguistic knowledge is a part of Linguistic Knowledge which is labeled Component 3 of my frame,

(3) On the other hand, monitoring from Component 1 must be activated for reading comprehension (by Uchida

and other cognitive studies),

(4) Language Exposure consists of linguistic metacognition (induction from Flavell),

(5) Thus if a learner is short of language exposure, then he lacks implicit linguistic knowledge, which implies that both Component 1 and Component 3 have become fragile and his monitoring system will not be effective.

The Japanese subjects in Japan in this research of course have acquired linguistic metacognitive abilities; that is why they did so well in the comprehension of Japanese texts. However, when they face a text written in a foreign language whose implicit linguistic knowledge is uncertain with less language exposure, the monitoring system between Component 1 and Component 3 will not be effective. This is the reason why J/J were poor in acquiring the gist of the text in this research.

2. Human Consciousness and Social Interaction

Luria (1982) argues that higher psychological processes have their origin in social interaction and that the origins of conscious activity must be sought not in the recesses of the human brain but in the external conditions of life.

> ...human cognition is a product of the cultural-historical milieu in which it evolves and can be examined in terms of the internalization of social interaction (p. 5).

All the constructs of the Component 1 and knowledge about reading, i.e., purposes of reading, motive, consciousness for the task and camera angle, are all self-regulative cognitive activities which must have arisen through the internalization of social interaction. In other words, social interaction must have played an important role in their constitution. Thus the component of "language exposure" in Bialystok's model can be interpreted as a base for Component 1 of my model. In the activity with one's mother tongue, monitoring system derived from Component 1 works well with support from social interaction. In the activity with a foreign language, however, monitoring is weak without the support of social interaction.

The realization of truthfulness behind a language will be brought about only when one is exposed to the context which one believes true. To experience and realize the authentic social context will harness one to understand the meaningfulness and the whole synthesis of the matter. Simultaneously, reading second language will then become closer to that of one's first language.

Table 1

Percentage of Correct Answers of Overall/Crucial Terms: Text A

	F/C	J/C	E/C	J/J
Overall	85.5	59	92.9	60.3
Crucial	90.4	79	91.3	61.8

Table 2

Number of Correct Answers of Crucial Terms: Text A

Answers	F/C N = 100	J/C N = 56	E/C N = 100	J/J N = 100
#32 and	78 (78%)	56 (100%)	100 (100%)	60 (60%)
#23 poor	100 (100%)	56 (100%)	100 (100%)	68 (68%)
#3 children	100 (100%)	56 (100%)	100 (100%)	78 (78%)
#5 milk	100 (100%)	33 (59%)	100 (100%)	65 (65%)
#4 village	76 (76%)	25 (45%)	85 (85%)	61 (61%)
#6 lake	79 (79%)	16 (29%)	77 (77%)	62 (62%)
#1/2 Philemon	95 (95%)	56 (100%)	84 (84%)	50 (50%)
#2/1 Baucis	95 (95%)	56 (100%)	84 (84%)	50 (50%)
	90.38%	79%	91.3%	61.8%

Table 3

Percentage of Correct Answers of Overall/Crucial Terms: Text B

	F/C	J/C	E/C	J/J
Overall	98.3	83.7	99.2	53.1
Critical	98.7	88.8	98.7	55.9

Table 4

Number of Correct Answers of Crucial Terms: Text B

Answers	F/C N = 60	J/C N = 46	E/C N = 60	J/J N = 60
#12 doubt	60 (100%)	46 (100%)	60 (100%)	37 (61.7%)
#21 but	60 (100%)	45 (97.8%)	58 (97%)	35 (58.3%
#8 long	60 (100%)	38 (82.6%)	60 (100%)	34 (56.7%)
#10 low	60 (100%)	40 (87%)	60 (100%)	31 (51.7%)
#11 two	59 (98%)	34 (73.9%)	57 (97%)	22 (36.7%)
#2 sheep	56 (93%)	42 (91.3%)	60 (100%)	42 (70%)
	98.7%	88.8%	98.7%	55.9%

Figure 1 Process of Understanding Texts

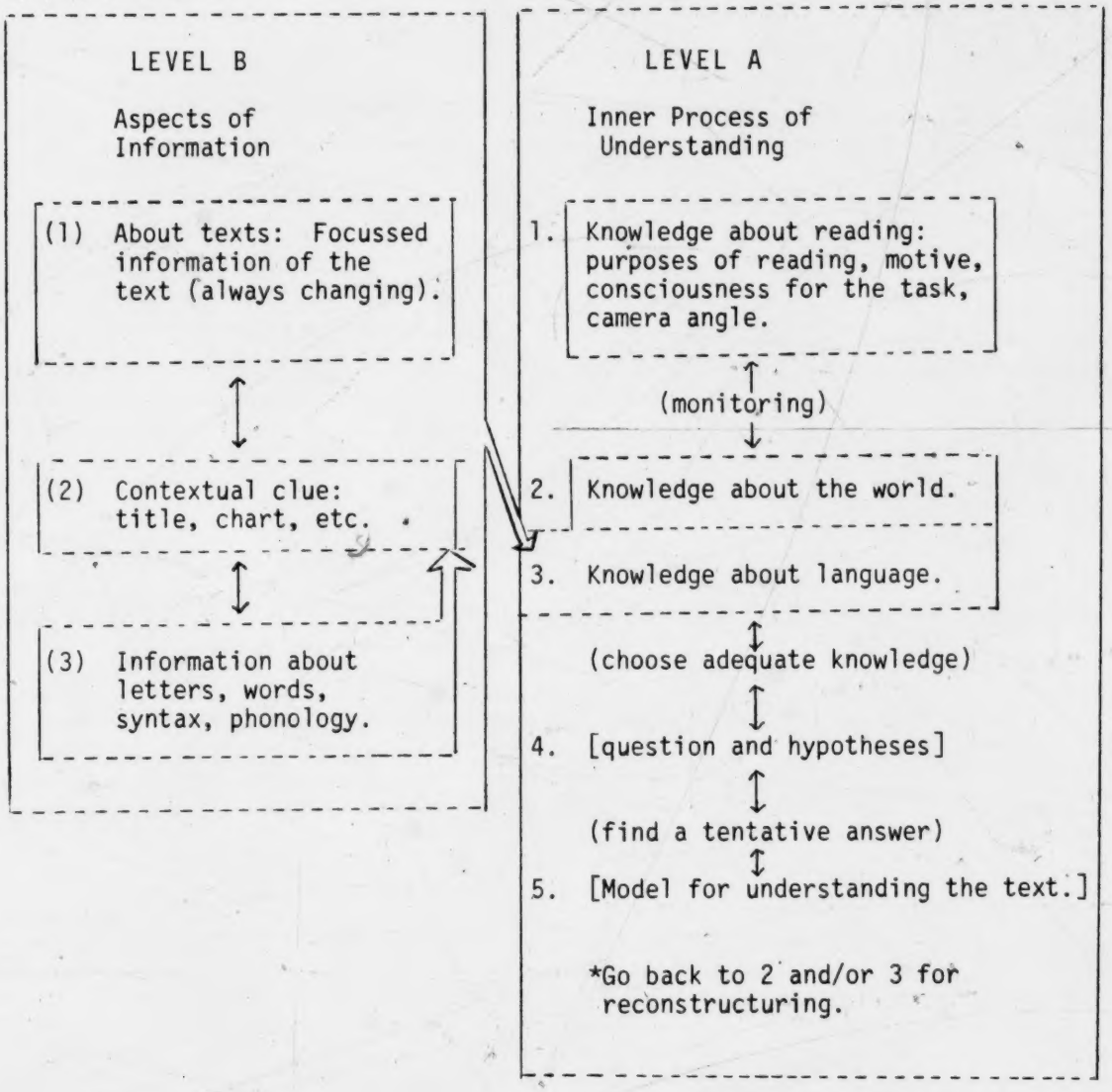

LEVEL B
Aspects of Information
(1) About texts: Focussed information of the text (always changing).
(2) Contextual clue: title, chart, etc.
(3) Information about letters, words, syntax, phonology.
LEVEL A
Inner Process of Understanding
1. Knowledge about reading: purposes of reading, motive, consciousness for the task, camera angle.
(monitoring)
2. Knowledge about the world.
3. Knowledge about language.
(choose adequate knowledge)
4. [question and hypotheses]
(find a tentative answer)
5. [Model for understanding the text.]
*Go back to 2 and/or 3 for reconstructuring.

Figure 2

Bialystok's Model of Second Language Learning

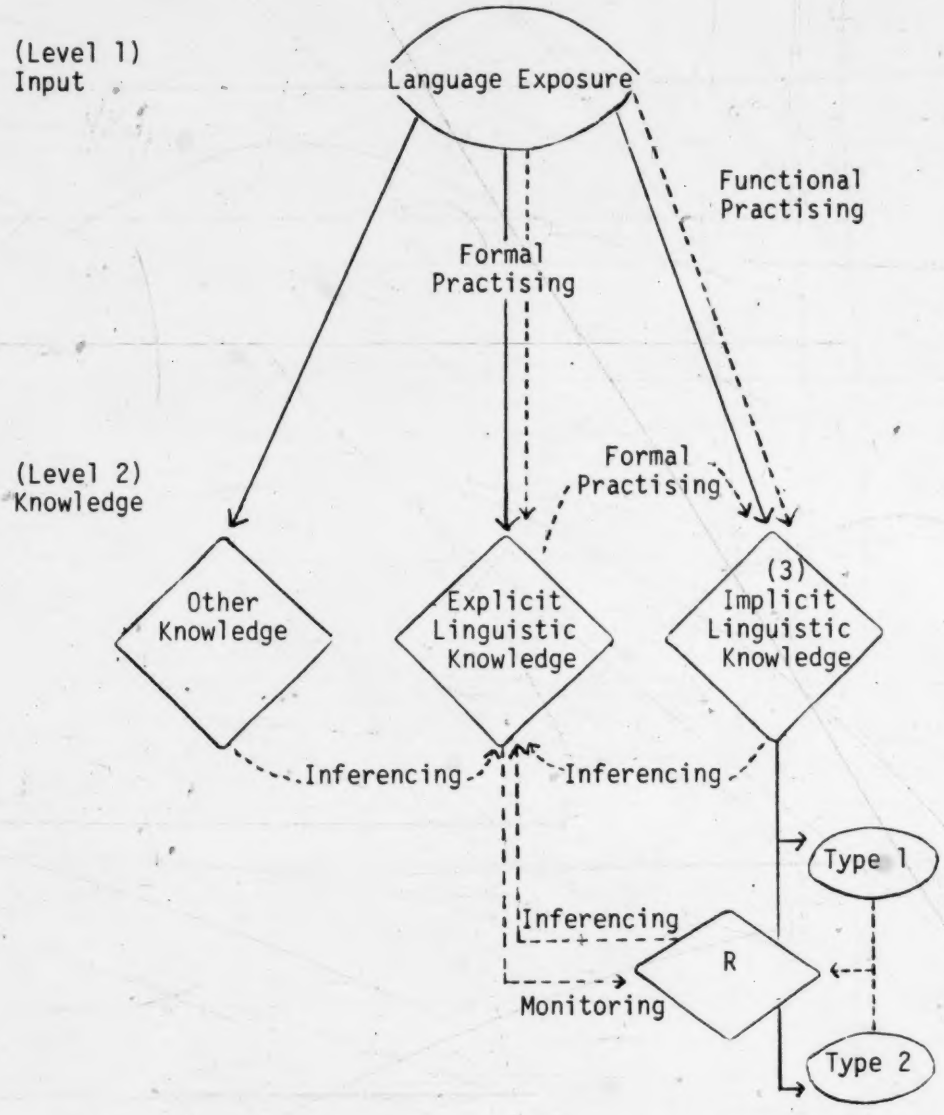


Figure 3

Correct Answers of Overall/Crucial Terms (Text A)

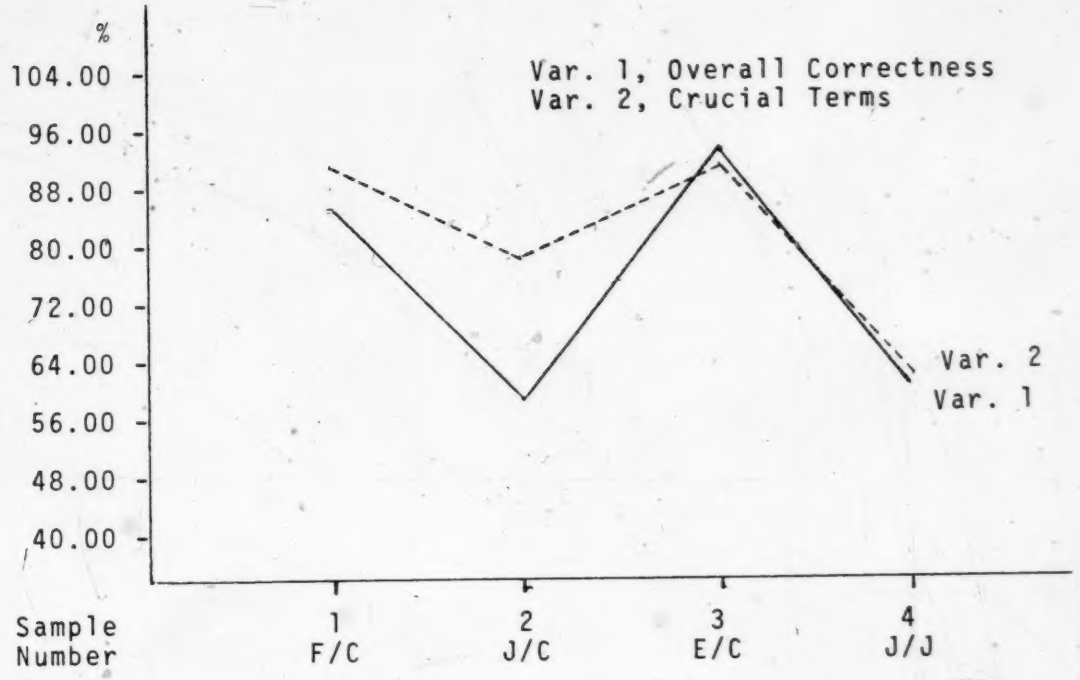


Figure 4

Comparison of Correct Answers Between

Overall/Crucial Terms (Text B)

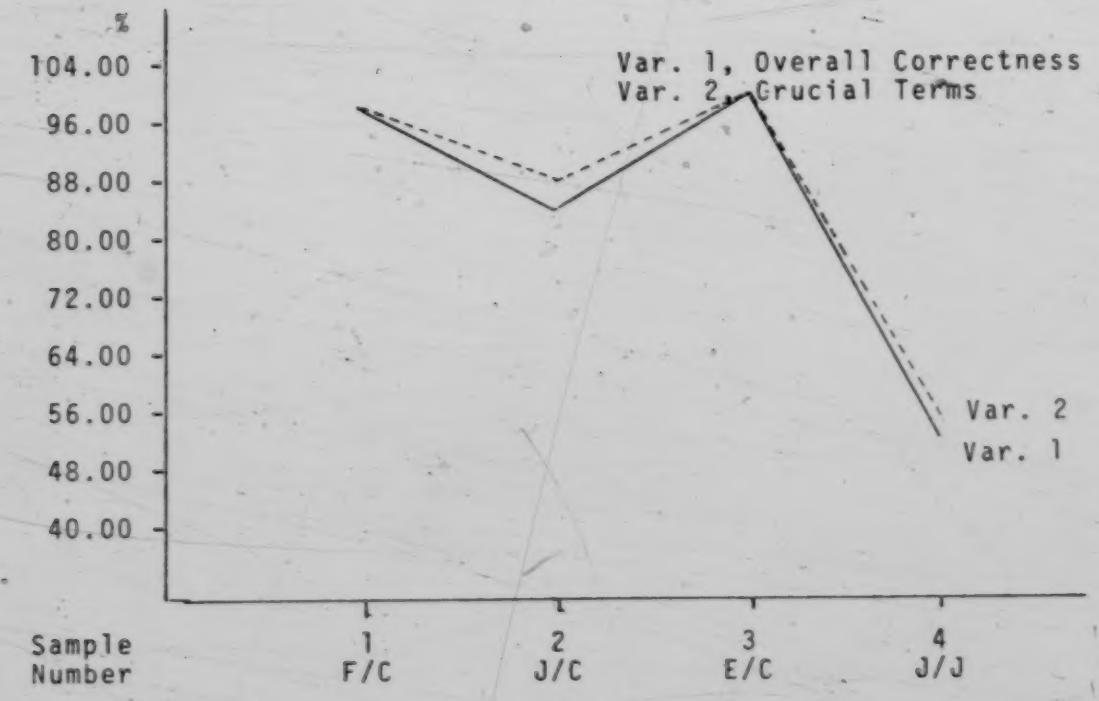


Figure 5

Achievement of EFL/ESL versus
Japanese as a Mother Tongue

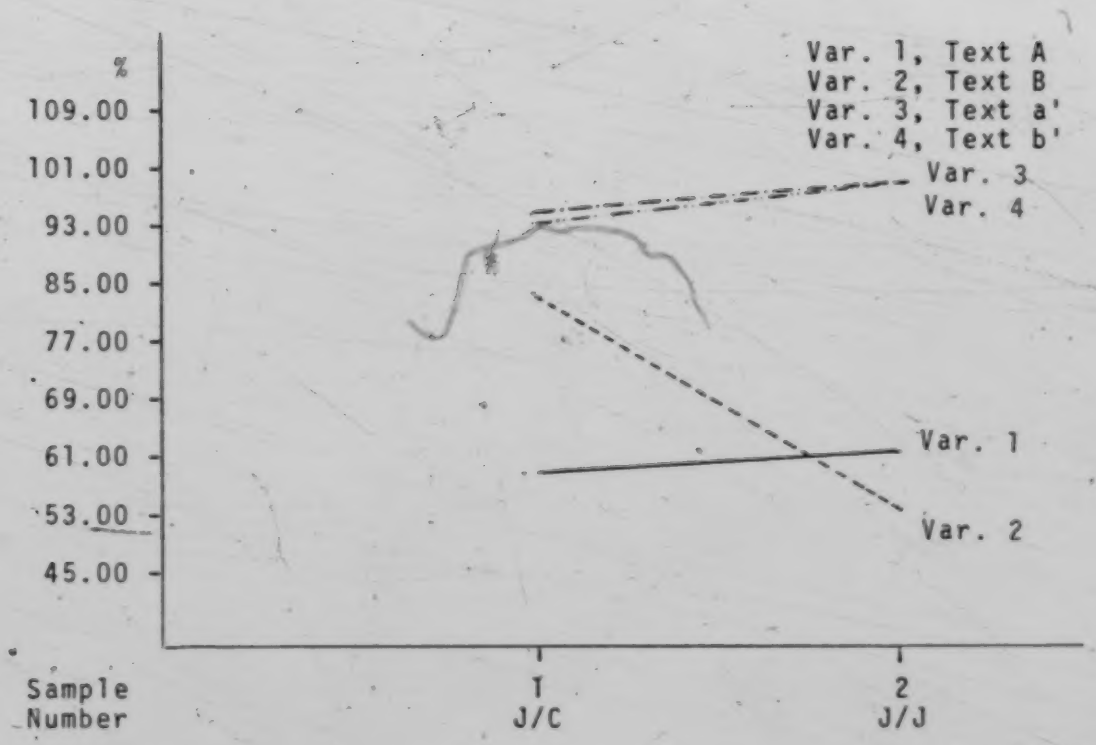


Figure 6

Achievement of F/C (Texts A, a, B, b)

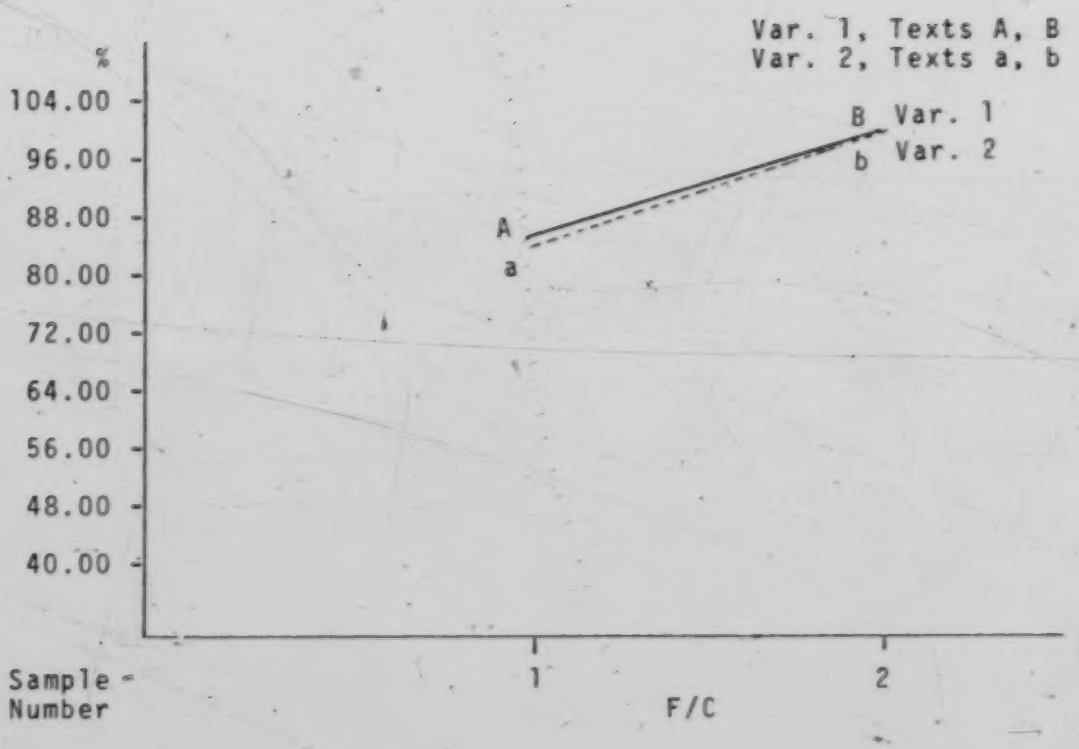


Figure 7

Comparison Between F/C and J/C (Texts A, B)

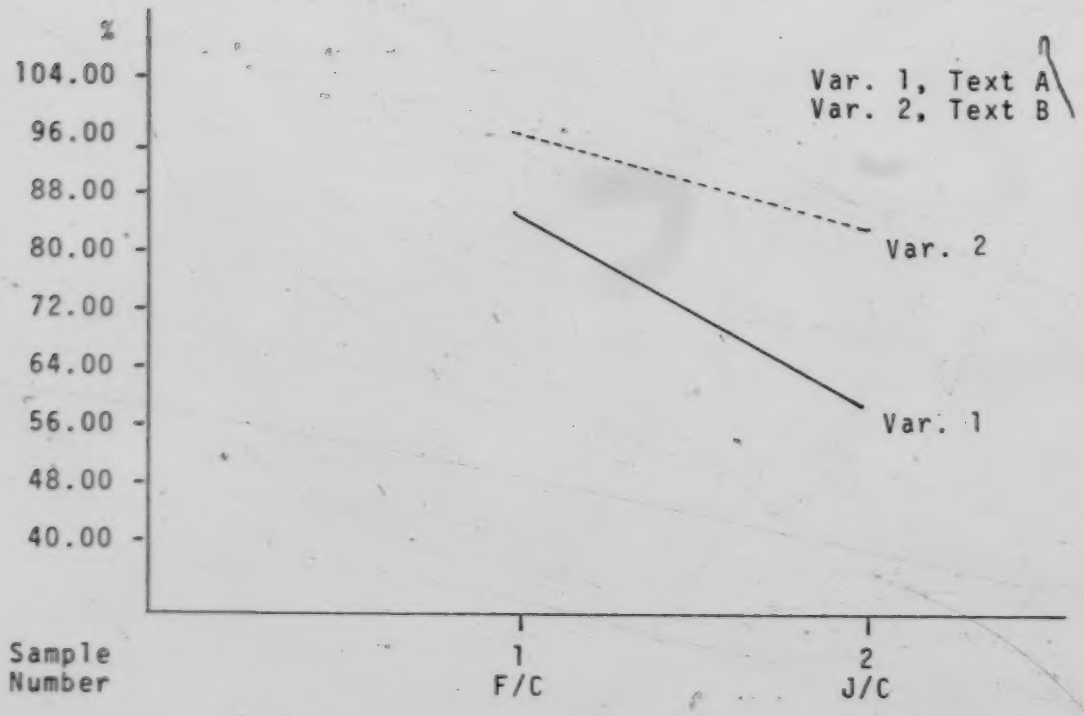


Figure 8

Comparison Between F/C and E/C

(Texts A, a, B, b)

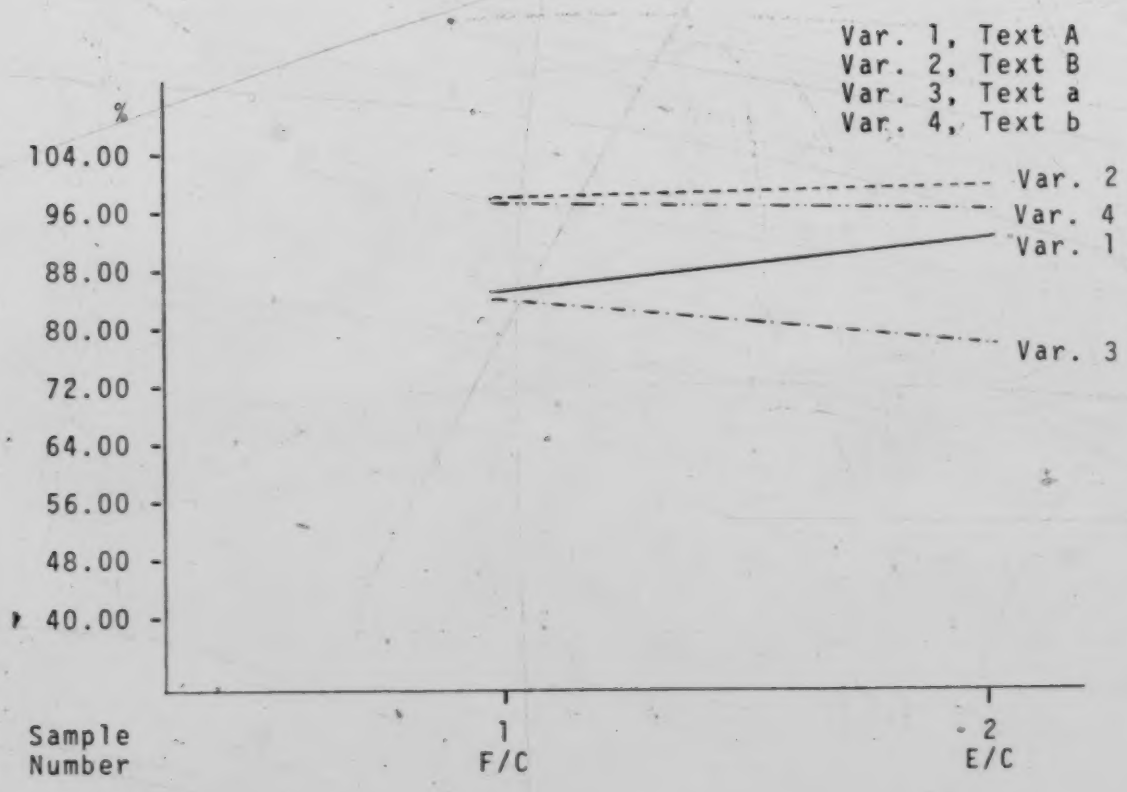


Figure 9-(1)

Incorrect and Nil Answers by J/C

(Text A)

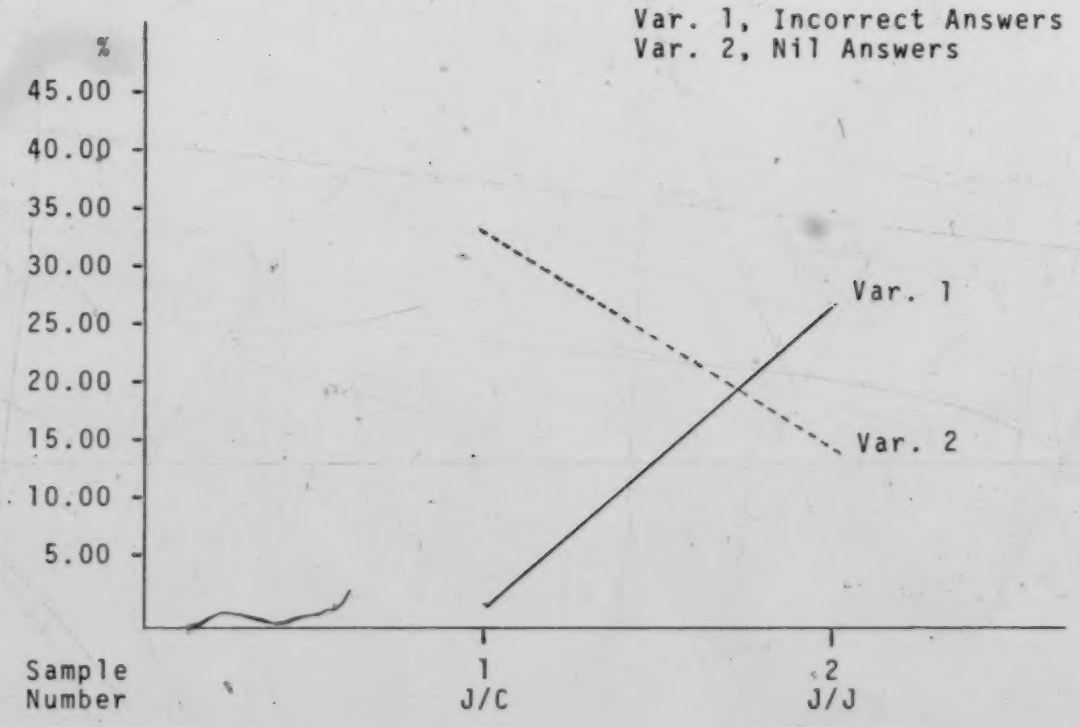


Figure 9-(2)

Incorrect and Nil Answers by J/C

(Text B)

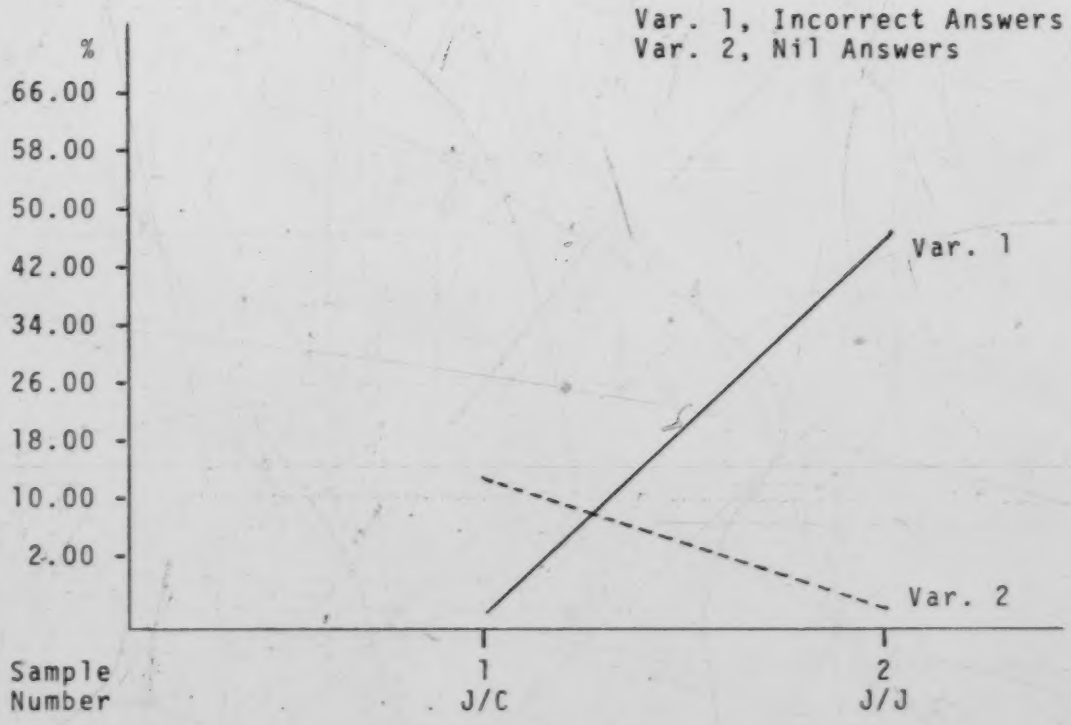
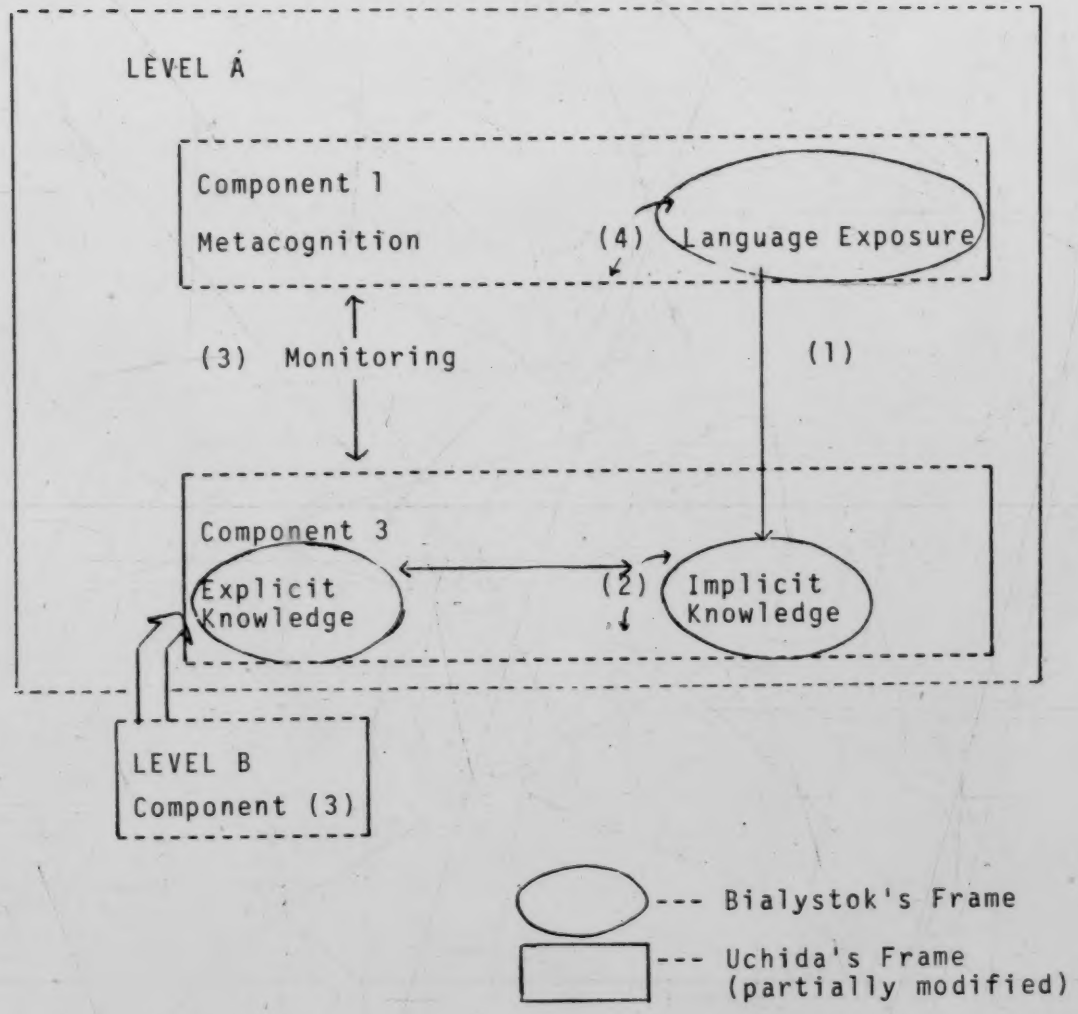


Figure 10

Schema of Reading Comprehension of Second/Foreign Language



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Appendix 1

Test Sheet

(Test A, English)

Read the following story and choose the words for the blanks from the sheet A-3. You can use the same words as often as you like.

A long, long time ago, ( ) was an old man, Philemon, and his old wife, Baucis. They lived near a village. Many thousands of years earlier, there was a lake where the ( ) now stood. The lake had already dried up long ago. Philemon and Baucis were kind and friendly, and always ( ) a traveller some supper ( ) a place to sleep for the night. ( ), the people in the village were mean and unfriendly. They helped rich travellers, but threw stones at ( ) travellers and chased them ( ). The village children and dogs were mean too. The ( ) threw stones at the travellers and the dogs ( ) them.

( ) evening after supper, Philemon and Baucis were sitting ( ) front of their house. Two strangers came along. ( ) were dressed poorly. The ( ) and the dogs chased them. Philemon welcomed them ( ) his house and ( ) them some supper. The younger stranger was very cheerful and liked to ( ), but the ( ) man was very

quiet. He asked Philemon about the lake that had once covered the land, and said that the lake should once again cover the village because the people were ( ) to the ( ) travellers.

Before the two men entered Philemon's house, a strange thing ( ). The young man's walking stick, which had wings on top, followed him into the house. ( ) strange things happened inside. Baucis poured some milk ( ) the men's cups. And she was sure there was no more milk left in the pitcher. ( ), the young man asked for more milk and reached for the empty pitcher, and ( ), he poured two more cups ( ) milk. Baucis was ( ) there was ( ) more bread either, ( ) he kept cutting more and more bread. Then the men asked for more milk. Philemon knew there was none inside, ( ), when he looked in again, he saw a fountain of ( ) at the bottom, filling the pitcher. "How is this possible?" she asked. The young man ( ) that he had a magic ( ) stick. The milk continued to pur and there was always more bread all evening.

The next morning, the travellers were up and ready to ( ). Philemon and Baucis went ( ) them to show them the road. The travellers thanked them ( ) their kindness, ( ) said that the mean village people should not live any longer. Then the travellers

showed Philemon and Baucis a strange sight: the ( ) was gone! In its place was a wide, deep ( ). They told them that all the village people were ( ) to fish.

( ), the older traveller asked Philemon about his greatest wish. Philemon answered ( ) he wanted ( ) to live and die with Baucis. The traveller told him his wish would come ( ). Then he ( ) their old house into a beautiful palace ( ) a lovely garden in front.

Philemon and Baucis lived in the palace for many years and were always kind to the travellers.

One morning, Philemon and Baucis were gone. Suddenly, two big trees appeared in the garden. One was an oak and the ( ) a linden. The trees were ( ) and ( ). They lived together for many, many more years and gave shade to hot, tired travellers.

(A-3)

1. Baucis
2. Philemon
3. children
4. village
5. milk
6. lake
7. happened
8. turned
9. talk
10. answered
11. leave
12. gave
13. bit (v.)
14. mean
15. sure
16. they
17. one
18. that
19. other
20. another
21. there
22. walking
23. poor
24. true
25. miraculously
26. away
27. then
28. just
29. older
30. however
31. but
32. and
33. with
34. in
35. into
36. of
37. for
38. no
39. yet

Appendix I-2

(Text a, French)

Il ( ) une fois, un vieil homme, Philemon et sa vieille femme Baucis. Ils habitaient près du village. Il y a mille ans, existait un lac a la place où le ( ) etait maintenant installé. Depuis très longtemp ce lac était desséché. Philemon et Baucis étaient gentils et aimables, et ( ) toujours au voyageur un dîner ( ) un toit. ( ), les autres villageois étaient tous mechants et peu aimables. Ils aidaient les voyageurs riches, mais jetaient des pierres a ceux qui étaient ( ) et les ( ). Les enfants et les chiens du village etaient ausse méchants. Les ( ) étaient des pierres aux voyageurs et les chiens les ( ).

( ) soir, après le dîner, Philemon et Baucis étaient assis ( ) leur maison. Deux inconnus arrivèrent. ( ) etaient vêtus pauvrement et les ( ) et les chiens les chassèrent. Philemon les invita dans sa maison ( ) un souper. Le plus jeune inconnu était tres gai et aimait ( ), mais le ( ) homme était silencieus. Il posa des questions à Philemon a propos du lac qui avait une fois recouvert le pays et dit que ce lac devrait courvir encore le village car les gens étaient ( ) envers les voyageurs ( ).

1. Baucis
2. Philemon
3. enfants
4. village
5. levillage
6. lait
7. lac
8. se passa
9. transformes
10. changea
11. parler
12. répondit
13. partir
14. donnaient
15. mordaient
16. méchants
17. sure
18. ils
19. un
20. qu'
21. l'autre
22. autre
23. était
24. magique
25. pauvres
26. exaucé
27. étrange
28. chassaient
29. puis
30. seulement
31. vieil
32. cependant
33. mais
34. pourtant
35. et
36. les
37. accompagne
38. devant
39. dans
40. de
41. pour
42. n'y

Appendix 1-3

(Test a', Japanese)

ずっと大昔、フィレモンというおじいさんと、ボーシスという年をとった彼の妻が（　　）。　二人は村の近くに住んでいました。

それより何千年も前には、その（　　）が現在あるところは湖になっていました（　　）、その湖は、もうずっと前に干上がってしまっていました。　フィレモンとボーシスは、親切で思いやりのある人でした（　　）、いつも旅人に夕食（　　）眠る場所を（　　）。（　　）、他の村の人たちは皆、意地悪で不親切でした。彼らはお金持ちの旅人は助けましたが、（　　）い旅人には石を投げ、追い（　　）ました。村の子供たちや犬も意地悪でした。（　　）は旅人めがけて石を投げ、犬は（　　）のでした。

（　　）日の夕方、夕食後に、フィレモンとボーシスは、自分の家の前（　　）座っていました。　すると、二人の見知らぬ人がやってきました。（　　）は、みすぼらしい服を着ていたので、（　　）や犬に追い払われていました。　フィレモンは二人を家の中に迎え入れ、夕食を（　　）ました。　年の若い人方の人は非常に快活で（　　）でしたが、（　　）方の人は非常に（　　）人でした。

そのおじいさんはフィレモンに、昔この土地をおおっていた湖について尋ね、「この村の人たちは（　　）い旅人に（　　）、こんな村は再び湖でおおわれてしまえばいい」と話しました。

1. 湖
2. フィレモン
3. ボーシス
4. 出発
5. 子供たち
6. 確信
7. ミルク
8. 村
9. もう一本
10. 彼ら
11. 話し好き
12. 年老いた
13. 無口な
14. 不思議なことに
15. 払い
16. 分かっていた
17. いない
18. 起こりました
19. 差し出し
20. 与えていました
21. 答えました
22. 変わりました
23. おりました
24. かなえられる
25. なってしまった
26. 食いつく
27. 意地悪なので
28. それから
29. さらに
30. ところが
31. が
32. を
33. と
34. に
35. ので
36. や
37. だけ
38. のある
39. 貸し
40. ある

Appendix 1-4

(Text B, English)

There is no ( ) that wolves are very clever, especially when they hunt in pairs or in ( ). Several incidents which involved members of my own family will serve to illustrate this point. My brother came in from the ( ) one morning to announce that one of our sheep was missing. We all ( ) out immediately to investigate. ( ) enough, two sets of wolf tracks showed clearly where the marauders had slipped through the fence, and crimson stains on the snow showed where the kill had taken ( ). ( ), one aspect of the affair was most puzzling. The sheep had clearly been ( ) away, ( ) only one set of wolf tracks could be found leading out of the corral! ( ) had happened to the other wolf? My father ( ) the entire area and explained what had happened. His study of the tracks entering the corral showed him that one wolf had short front legs and high haunches, ( ) the other wolf had just the reverse -- ( ) front legs and ( ) haunches. It would obviously be difficult for either wolf to drag such a heavy creature ( ) a sheep all ( ) himself. They had developed together a scheme for combining their strength and physical characteristics to the best advantage. The ( ) with the

short front legs seized the sheep and threw ( ) across his companion's back, then straddling with his front legs the other's haunches, he held the sheep firmly ( ) place. Like one monstrous elongated wolf, the ( ) thieves sped away with their victim. My brothers followed the strange wolf tracks all morning and ( ) come upon the carcass of the ( ). They brought back the skin and a few scraps ( ) meat, ( ) the two clever wolves eluded them. In fact, they were never caught.

1. wolf
2. sheep
3. corral
4. place
5. packs
6. it
7. short
8. long
9. high
10. low
11. two
12. doubt
13. sure
14. examined
15. went
16. carried
17. what
18. however
19. finally
20. whereas
21. but
22. as
23. by
24. of
25. in

Appendix I-5

(Text b, French)

Il est ( ) que les loups sont tres intelligents, surtout quand ils chassent par paires ou en ( ). Quelques incidents qui ont impliqué des membres de ma propre famille serviront a illustrer ce point.

Un matin frère rentra de ( ), en annoncant qu'il manquait un mouton. Immédiatement, nous ( ) la chercher. Deux paires d'empreintes de loup montraient ( ) ou les pillards avaient glissés a travers la barrières et quelques taches porpres sur la neige indiquaient ( ) la tuerie s'était déroulée, ( ) un aspect de l'affaire était énigmatique. Il etait sûr que le mouton avait ( ), ( ) seulement une trace de loup été trouvée à l'interieur de la barrière. ( ) était devenu l'autre loup? Après avoir ( ) l'endroit entier, mon père expliqua ce qui s'était passé. Son examination des traces a l'intérieur de la clôture nous montra, qu'un loup avait les jambes de devant courtes et des hanches hautes ( ) que l'autre au contraire avait les jambes de devant ( ) et des hanches ( ). Il serait très difficile pour quelque loup d'emporter ( ) lui seul une créature si lourde ( ) qu'un mouton. Deux loups ont collaboré ensenmbe pour tuer, le meilleur moyen de combiner leur force et leur qualite

physique. ( ) avec les jambes de devant courtes, a tenu ( ) et l'a mis sur le dos de son compagnon puis enfourchant avec ses jambes de devant les hanches de l'autre, il tient fermement le mouton ( ) place. Comme un grand loup monstrueux, ( ) bandits se sont enfuits avec leur victime.

Mes frères suivirent les traces de cet étrange loup toute la matinée, et ( ) trouvèrent la carcasse du ( ). Ils rapportèrent la peau et quelques morceaux ( ) chair, ( ) ces deux loups intelligents ont reussi à se sauver. Finalement, ils ne furent jamais pris.

1. le loup
2. mouton
3. la plairie
4. où
5. groupe
6. le mouton
7. courtes
8. longues
9. hautes
10. basses
11. les deux
12. incontestable
13. clairement
14. examiné
15. partimes
16. été emporte
17. qu'
18. cependant
19. finalemant
20. et
21. mais
22. tel
23. à
24. de
25. en

Appendix I-6

(Test b, Japanese)

狼はとても頭がよいことは（　　）のないところであるが、とくに　ペアーを組んだり（　　）になって獲物をとる場合にその力が発揮される。私の家族が経験したいくつかの出来事をみるとこのことがよくわかる。

ある朝、兄が（　　）の見まわりから戻って、羊が一匹見当たらないと言った。私たちはすぐに捜しに（　　）。二組の狼の足跡を見れば、その悪漢どもが、柵のどこから忍び込んだのか一目瞭然だったし、雪の上のまっ赤な血を見れば、　殺害（　　）がどこなのかは明らかだった。（　　）、一つだけどうしてもわからないことがあった。羊が（　　）去られたことは間違いない（　　）、牧場から続いている狼の足跡は、一匹分しかない。もう一匹の狼は（　　）のだろう。父があたり一帯を　（　　）て、事のあらましを説明してくれた。

柵に続いている足跡を丹念に調べていったところ、片方は前足が短く、腰の高い狼である（　　）て、もう一方は、ちょうどその逆、つまり前足が（　　）く、腰が（　　）い。羊の（　　）に重い動物を一匹の狼の力（　　）でずっと引きずっていくことはどちらの狼にとってもまず不可能だろう。彼らは最大の効果をあげるために、二匹の力を合わせ、体の特徴を生かすことを考え出した。つまり前足の（　　）い狼が羊をくわえ、仲間の背中にかかえあげる－－それから前足で相手の腰をかかえて、しっかりと（　　）させる。こうしてまるで一匹の嗣長の化け狼のようなかっこうで、（　　）の盗賊は、獲物といっしょしょに逃げ

てしまったのだ。兄たちはその日の午前中ずっとその奇妙な足跡の後をつけていき、（　　）に、（　　）の死体を見つけた。そして、羊の皮（　　）、肉（　　）小片を再び置いてきた。（　　）、二匹の賢い狼は姿を消してしまって、絶対につかまらなかった。

1. 羊
2. 現場
3. 二匹
4. 牧場
5. 固定
6. 群れ
7. 疑い
8. 長
9. 短
10. 高
11. 低
12. 運び
13. 調べ
14. でかけた
15. しかしながら
16. のに対し
17. どうなった
18. させる
19. のに
20. だけ
21. つい
22. の
23. と
24. よう

APPENDICES

Appendix II

Number of Correct, Incorrect and Nil Answers[7]

II-1 (Text A, English)

Key No.	F/C (m) (N = 50)			F/C (f) (N = 50)			J/C (m) (N = 38)			J/C (f) (N = 18)		
	C	I	N	C	I	N	C	I	N	C	I	N
21	50			50			36	2		17		1
4	50			50			38			18		
12	50			50			38			18		
32	36	14		42	8		38			18		
30	50			50			16	8	14	12	2	4
23	50			50			38			18		
26	50			50			38			18		
3	50			50			38			18		
13	18	4	28	21	11	18	22	1	15	12	2	4
17	40	9	1	38	9	3	36	1	1	14	2	2
34	50			50			38			16	1	1
16	43	6	1	46	4		14	6	18	11	2	5
3	50			50			38			18		
35	39	6	5	48		2	22	5	11	9	3	6
12	46	1	3	42	7	1	18	6	14	6	4	8
9	50			50			38			18		
29/19	47	2	1	41	7	2	27	4	7	12	3	3
14	25	13	12	31	11	8	13	9	16	3	4	11
23	32	11	7	36	10	4	31		7	11	1	6
7	41	6	3	39	9	2	12	6	20	10	4	4

...cont'd

[7]Key numbers encircled are crucial terms. See pp. 41-44.

(Text A, English)

Key No.	F/C (m) (N = 50)			F/C (f) (N = 50)			J/C (m) (N = 50)			J/C (f) (N = 50)		
	C	I	N	C	I	N	C	I	N	C	I	N
27	44	3	3	48	2		22	7	9	11	3	4
35	50			50			24	3	11	12	2	4
*30	41	8	1	47	3		19	7	12	9	3	6
25	50			48	1	1	31	2	5	15	1	2
36	39	8	3	42	6	2	27	2	9	16		2
15	43	6	1	41	5	4	19	8	11	11	2	5
38	41	5	4	43	6	1	31		7	13	1	4
39	47	2	1	50			11	9	18	7	5	6
*30	9	41		14	36		32	1	5	17		1
5	50			50			22	3	13	11	2	5
10	44	5	1	46	2	1	13	3	22	6	2	10
22	46		4	45	3	2	17	3	18	16	1	1
11	41	6	3	43	4	3	14	7	17	9	2	7
33	37	2	11	39	6	5	16	3	19	10	2	6
37	36	8	6	38	7	5	14	1	23	9	1	8
32	40	6	4	36	4	10	14	2	22	5	2	11
4	41	6	3	35	6	9	19	6	13	6	1	11
6	39	8	3	40	3	7	13	6	19	3	1	14
8	35	6	9	37	8	5	14	4	20	3		15
27	34	3	13	36	4	10	14	3	21	2		16
18	35	3	12	31	8	11	2		36	3	1	14
28	39	2	9	37	1	12	7		31	3		15
24	40	1	9	41		9	8		30	1	1	16
8	40		10	39		11	1		37	2		16
33	37		13	33		17	5		33	1		17
19	36		14	34		16	7		31	1		17
1/2	48		2	47		3	38			18		
2/1	48		2	47		3	38			18		
	1947	152	201	1961	152	187	1030	120	598	498	58	281
			2300			2300			1748			828

...cont'd

*#30 of Text A and #18 of Text B are counted separately from this data. See pp. 51-52.

(Text A, English)

Key No.	E/C (m) (N = 50)			E/C (f) (N = 50)			J/J (m) (N = 50)			J/J (f) (N = 50)		
	C	I	N	C	I	N	C	I	N	C	I	N
21	50			50			41	8	1	37	13	
4	50			50			37	9	4	28	20	2
12	50			50			35	11	4	33	17	
32	50			50			30	18	2	30	17	3
30	50			50			13	33	4	24	26	
23	50			50			34	11	5	34	12	4
26	50			50			27	18	5	22	21	7
3	50			50			37	10	3	41	9	
13	50			49		1	31	16	3	33	14	3
17	48	1	1	49	1		38	10	2	35	15	
34	50			50			46	4		42	7	1
16	48		2	50			44	4	2	46	4	
3	50			50			40	4	6	37	12	1
35	50			50			33	16	1	31	17	2
12	50			47	2	1	40	6	4	35	10	5
9	50			50			34	14	2	28	17	5
29/19	46	2	2	50			36	12	2	40	8	2
14	47	2	1	50			26	18	6	25	20	5
23	46	3	1	50			33	11	6	34	13	3
7	48	1	1	49		1	37	8	5	38	9	3

...cont'd

(Text A, English)

Key No.	E/C (m) (N = 50)			E/C (f) (N = 50)			J/J (m) (N = 50)			J/J (f) (N = 50)		
	C	I	N	C	I	N	C	I	N	C	I	N
27	46	3	1	48	1	1	22	25	3	18	26	6
35	50			50			22	23	5	33	15	2
30	41	9		38	12		12	32	6	15	35	
25	44	4	2	47	2	1	9	34	7	11	30	9
36	49	1		48	1	1	16	29	5	20	3	
15	46	3	1	50			26	14	10	29	12	9
38	49	1		50			32	10	8	31	11	8
39	50			50			24	18	8	23	17	10
30	7	40	3	4	41	5	15	23	12	14	36	10
5	50			50			31	8	11	34	11	5
10	48	1	1	47	2	1	34	9	7	34	12	4
22	50			48	2		32	11	7	24	17	9
11	42	4	4	43	7		32	11	7	35	10	5
33	39	8	3	41	7	2	21	21	8	24	20	6
37	38	7	5	37	9	4	31	11	8	30	7	13
32	41	8	1	41	9		36	8	6	32	7	11
4	43	6	1	42	7	1	31	11	8	27	10	13
6	38	4	8	39	5	6	32	7	11	30	6	14
8	37	4	9	40	2	8	30	11	9	30	8	12
27	41	2	7	33	1	6	34	8	8	33	5	12
18	42	1	7	39	2	9	35	5	10	34	1	15
28	43	2	5	43	1	6	14	17	19	19	14	17
24	44	3	3	44		6	21	18	11	33	4	13
8	41		9	41		9	28	12	10	25	9	16
33	43		7	42		8	27	13	10	23	13	14
19	47		3	46		4	27	11	12	30	5	15
1/2	43		7	41		9	23	16	11	27	9	14
2/1	43		7	41		9	23	14	13	27	9	14
	2130	73	97	2143	63	94	385	616	299	1389	596	315
			2300			2300			2300			2300

Appendix II-2

(Text a, French)

Key No.	F/C (m) (N = 30)			F/C (f) (N = 30)			E/C (m) (N = 30)			E/C (f) (N = 30)		
	C	I	N	C	I	N	C	I	N	C	I	N
23	30			30			28	1	1	30		
4	30			30			30			30		
14	30			30			29	1		28	1	1
35	29	1		30			30			29	1	
32	26	3	1	28	1	1	25	3	2	30		
25	30			30			30			30		
28	26	2	2	24	4	2	22	6	2	27	2	1
3	30			30			30			30		
15	27	2	1	28	2		24	1	5	26	3	1
19	30			30			30			30		
38	30			30			30			30		
18	30			30			28		2	30		
16	27	1	2	29	1		27	1	2	27	2	1
41	22	3	5	23	2	5	19	2	9	21	1	8
11	20	4	6	19	3	8	14	1	15	13	2	15
31	15	1	14	17	1	12	10	3	17	11	4	15
16	9	5	16	8	4	18	4	6	20	3	5	22
25	11	2	17	12	1	17	6	3	21	7	4	19
	452	24	64	458	19	63	416	28	96	432	25	83
			540			540			540			540

Appendix II-3

(Text a', Japanese)

Key No.	J/C (m) (N = 22)			J/C (f) (N = 22)			J/J (m) (N = 22)			J/J (f) (N = 22)		
	C	I	N	C	I	N	C	I	N	C	I	N
23	22			22			22			22		
8	22			21		1	22			22		
31	21		1	22			22			22		
35	20		2	21		1	22			22		
36	16		6	18	1	3	22			22		
20	19	1	2	20	1	1	22			22		
30	22			21		1	20	2		22		
39	20	1	1	19		3	22			22		
15	21		1	20		2	22			22		
5	18	1	3	21		1	22			22		
26	20	1	1	19	1	2	22			22		
40	22			21		1	22			22		
34	19	1	2	19		3	22			22		
10	21		1	22			22			22		
5	22			22			22			22		
19	22	1	1	22			22			22		
11	20	1	1	22			22			22		
12	19	1	2	21		1	22			22		
13	22			22			22			22		
39	22			22			22			22		
27	22			22			22			22		
	432	7	23	439	3	20	460	2		462		
			462			462			462			462

Appendix II-4

(Text B, English)

Key No.	F/C (m) (N = 30)			F/C (f) (N = 30)			J/C (m) (N = 30)			J/C (f) (N = 16)		
	C	I	N	C	I	N	C	I	N	C	I	N
12	30			30			30			16		
5	29	1		30			27	1	2	16		
3	26		4	29	1		29		1	15		1
15	30			30			26	2	2	14		2
13	30			29		1	23	2	5	11	1	4
4	30			30			26	1	3	12	1	3
*18	2	28		1	29		24	5	1	16		
16	30			30			22	2	6	13	1	2
21	30			30			29		1	16		
17	27	3		30			24	6		14	1	1
14	30			30			22	1	7	13	2	1
20/21	30			30			29		1	16		
8	30			30			26	2	2	12	1	3
10	30			30			26	2	2	14		2
22	30			30			14	6	10	9	1	6
23	29	1		30			22	4	4	10	1	5
1	30			30			30			16		
6	30			30			26	1	3	11	1	4
25	30			30			24	2	4	15		1
11	29	1		30			23		7	13		3
19	29	1		28	2		21		9	12		4
2	28	2		29	1		28		2	14		2
24	27	3		29	1		28		2	11		5
	644	12	4	654	5	1	555	32	7	293	10	49
			660			660			660			352

(Text B, English)

Key No.	E/C (m) (N = 30)			E/C (f) (N = 30)			J/J (m) (N = 30)			J/J (f) (N = 30)		
	C	I	N	C	I	N	C	I	N	C	I	N
12	30			30			21	8	1	16	13	1
5	30			30			13	16	1	14	16	
3	30			30			21	8	1	16	14	
15	30			30			21	8	1	20	10	
13	30			30			6	20	4	5	23	2
4	30			29	1		13	15	2	12	18	
*18	4	26		3	27		17	11	2	13	17	
16	30			30			14	16		15	15	
21	30			28	2		22	4	4	13	15	2
17	29	1		30			28	2		26	3	1
14	29		1	30			15	14	1	10	19	1
20/21	30			30			15	14	1	19	10	1
8	30			30			15	13	2	19	10	1
10	30			30			16	12	2	15	14	1
22	30			30			10	19	1	4	25	1
23	29	1		30			26	3	1	10	19	1
1	30			30			24	6		27	3	
6	30			29	1		17	12	1	11	18	1
25	30			30			13	13	4	17	12	1
11	30			27	3		14	13	3	8	20	2
19	30			29	1		12	13	5	12	16	2
2	30			30			23	6	1	19	9	2
24	30			30			22	5	3	12	17	1
	657	2	1	652	8		381	240	39	320	319	21
			660			660			660			660

Appendix II-5

(Text b, French)

Key No.	F/C (m) (N = 30)			F/C (f) (N = 30)			E/C (m) (N = 30)			E/C (f) (N = 30)		
	C	I	N	C	I	N	C	I	N	C	I	N
12	30			30			30			30		
5	30			30			30			30		
3	29	1		30			28	2		30		
15	28	1	1	30			27	2	1	29	1	
13	30			30			30			30		
4	30			30			30			30		
21	27	2	1	29	1		26	3	1	28	1	1
16	26	2	2	27	2	1	30			29	1	
21	29	1		29	1		28	2		28	2	
17	30			30			30			30		
14	27	1	2	29	1		28	2		29	1	
20	30			30			30			30		
8	26	3	1	25	4	1	26	3	1	24	3	3
10	30			30			30			30		
23	30			30			30			30		
22	30			30			26	2	2	25	4	1
1	30			30			30			30		
6	30			30			30			30		
25	30			30			27	2	1	29		1
11	30			30			30			30		
19	30			30			30			29		1
2	30			30			30			29		1
24	30			30			29			29		1
18	30			30			30	1		29		1
	702	11	7	709	9	2	695	19	6	697	13	10
		720			720			720			720	

Appendix II-6

(Text b', Japanese)

Key No.	J/C (m) (N = 22)			J/C (f) (N = 22)			J/J (m) (N - 22)			J/J (f) (N = 22)		
	C	I	N	C	I	N	C	I	N	C	I	N
7	22			22			22			22		
6	15	7		18	3		21	1		22		
4	21		1	22			22			22		
14	16	6		19	3		22			22		
2	20		2	22			22			22		
15	22			22			22			22		
12	22			22			22			22		
19/16	22			21		1	22			22		
17	21		1	22			22			22		
13	19		3	22			22			22		
16	22			19	1	2	22			22		
8	18	3	1	16	2	4	22			22		
11	14	6	2	18	1	3	22			22		
24	22			22			22			22		
20	22			21		1	22			22		
9	22			22			22			22		
5	21	1		22			22			22		
3	20	1	1	21		1	22			22		
21	22			22			22			22		
1	22			22			22			22		
23	21		1	21		1	22			22		
22	20		2	21		1	22			22		
15	19		3	20	1	1	22			22		
	465	24	17	479	11	16	505	1		506		
			506			506			506			506